
MDE
Maryland Department
of the Environment
ANNUAL REPORT
2000

Table of Contents

A Message from the Governor

Dear Fellow Marylanders:

Maryland has a proud and strong tradition of responsible management and careful protection of our environmental resources. Our efforts to restore the Chesapeake Bay and protect our air and water have been studied and replicated throughout the world. Through Smart Growth, Maryland is showing that communities can grow and prosper without abandoning older neighborhoods, without building more superhighways, and without destroying our remaining fields, farms and forests. We should all be proud that Smart Growth has literally become a national — even international — movement.

Smart Growth was launched in Maryland four years ago to curb runaway sprawl that was destroying open space, clogging highways, and creating decaying neighborhoods as people moved farther and farther from our older established communities. We are already seeing encouraging signs: abandoned industrial sites are now vibrant retail and office areas, 214,000 acres of green space has been protected from development, and greater resources have been targeted to public transportation. Without a doubt, Smart Growth is having a dramatic impact on our efforts to protect our air, land and water and on the way we think about land use.

Both Lt. Governor Kathleen Kennedy Townsend and I will continue our aggressive efforts to encourage the redevelopment of brownfields, build water and sewer infrastructure in more efficient patterns, restore our wetlands, and develop better land use patterns to improve air and water quality. Working together we can make Maryland an even better place to live; working together we can preserve what is best about Maryland.

Sincerely,

Parris N Glendening

Message from the Secretary

The year 2000 has been an historic moment in time. We are at the threshold of a new millennium where the opportunities to improve our lives and the environment seem endless. Our enthusiasm in providing stewardship of the land, air and water gains momentum as we look forward to the possibilities of new partnerships and technologies that will strengthen the improvements that have been achieved thus far.

The Maryland Department of the Environment's *Annual Report 2000* describes where we are on the journey toward the preservation and restoration of our environment. Governor Glendening's quality management leadership drives our Annual Report. His leadership emphasizes establishing a mission, vision and goals in order to move our Department forward into the new millennium. To succeed in our mission, MDE has developed nine goals that echo the core environmental values of the citizens of this great State. From smart growth and community revitalization, to safe and adequate drinking water, and clean air, each of our nine goals has an impact on the livability of our communities.

The Maryland Department of the Environment's (MDE) mission is to protect and restore the quality of Maryland's air, land, and water resources, while fostering smart growth, economic development, healthy and safe communities, and quality environmental education for the benefit of the environment, public health, and future generations.

The *MDE Annual Report 2000* describes our activities as reflected in the diversity of our goals, answering these questions: where are we now, what actions are we taking, and what challenges do we face in achieving our environmental goals?

The Department is excited about the environmental successes and improvements that have been achieved in the past, as well as the challenges that lie ahead, such as implementing one of the nation's most progressive Smart Growth programs, increasing our recycling rates, furthering progress in meeting national drinking water and water quality standards, reducing occurrences of childhood lead poisoning, ensuring that the air is safe to breathe, restoring wetland resources across Maryland, and improving the quality of government services to its customers.

I hope that you enjoy reading the Maryland Department of the Environment's *Annual Report 2000*. We are proud of our work to protect and restore Maryland's environment and look forward to the future as we continue to work with our stakeholders to deliver the highest quality of services and to provide the highest quality of environmental and public health protection to Maryland citizens.

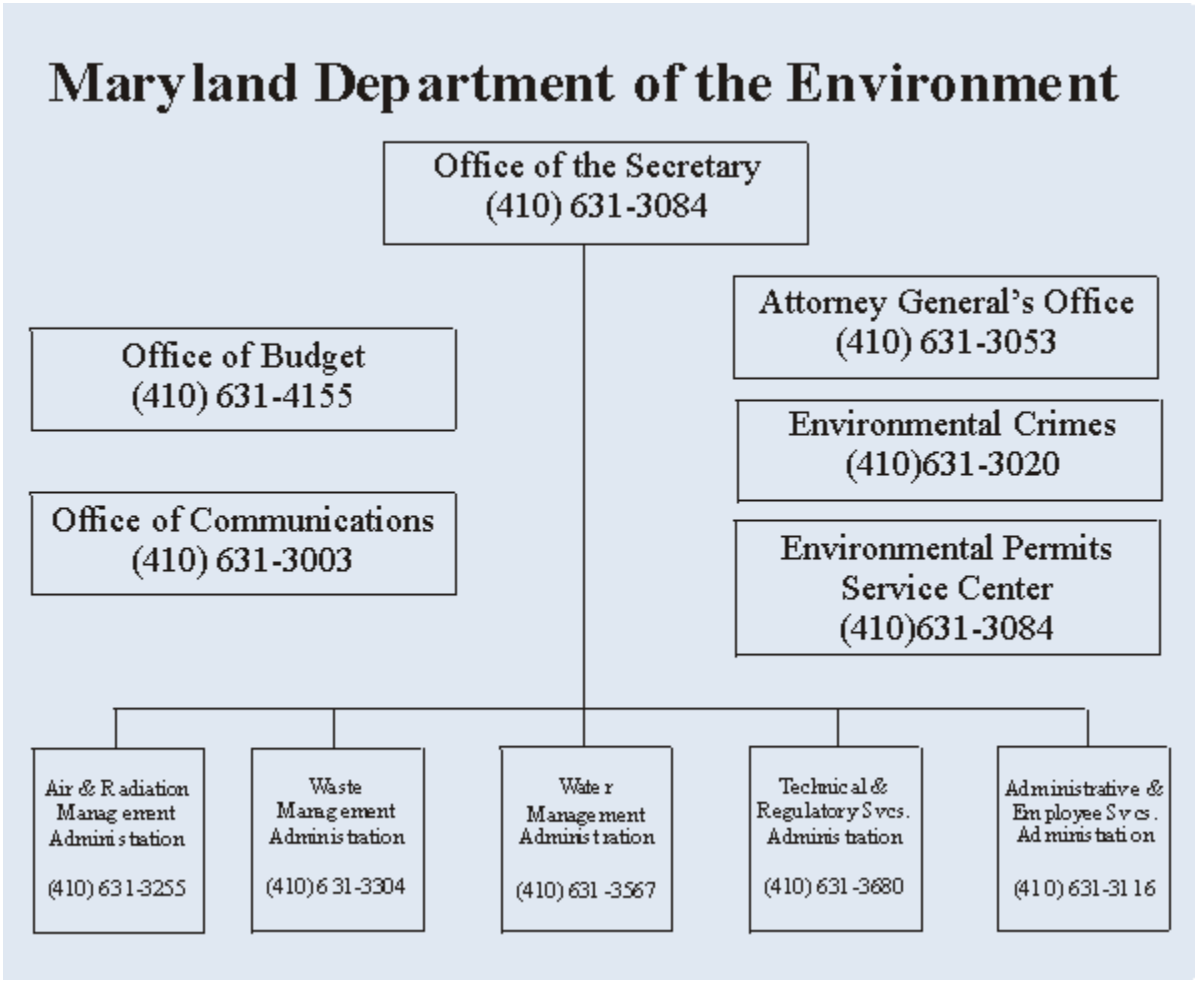
Jane Nishida

About the Department

The Maryland Department of the Environment (MDE) was created in 1987 from environmental protection programs in the Department of Health and Mental Hygiene and the Department of Natural Resources. MDE's mission is to protect and restore the quality of Maryland's air, water, and land resources, while fostering smart growth, economic development, safe communities, and quality environmental education, for the benefit of the environment, public health, and future generations. The Department accomplishes its mission by assessing, preventing, and controlling sources of pollution to foster an excellent quality of life for all Marylanders.
In FY 2000, MDE's staff included 956 permanent employees and 49 contractual employees. These dedicated employees are a diverse mix of engineers, scientists, planners, inspectors, accountants, secretaries, and many other professions. To carry out its mission, MDE works with a variety of stakeholders, such as citizens, community groups, industries and their associations, environmental leaders, and local government officials.

MDE is committed to using the Managing Maryland for Results (MFR) strategic and quality planning approach to ensure that MDE continuously improves its services and environmental results to achieve its public health and environmental protection goals. The Department communicates its progress through its annual *MFR Fiscal Year Workplan*, which includes performance measures for each management objective, and *Maryland's Environmental Indicators*, a status report of 54 indicators that is updated biannually and is jointly produced with the Department of Natural Resources. In addition, the *MDEnvironment*, a monthly newsletter, is distributed to more than 6,000 stakeholders. Each of these documents provides an abundance of environmental data and information and can be found on MDE's web page www.mde.state.md.us

Maryland Department of the Environment



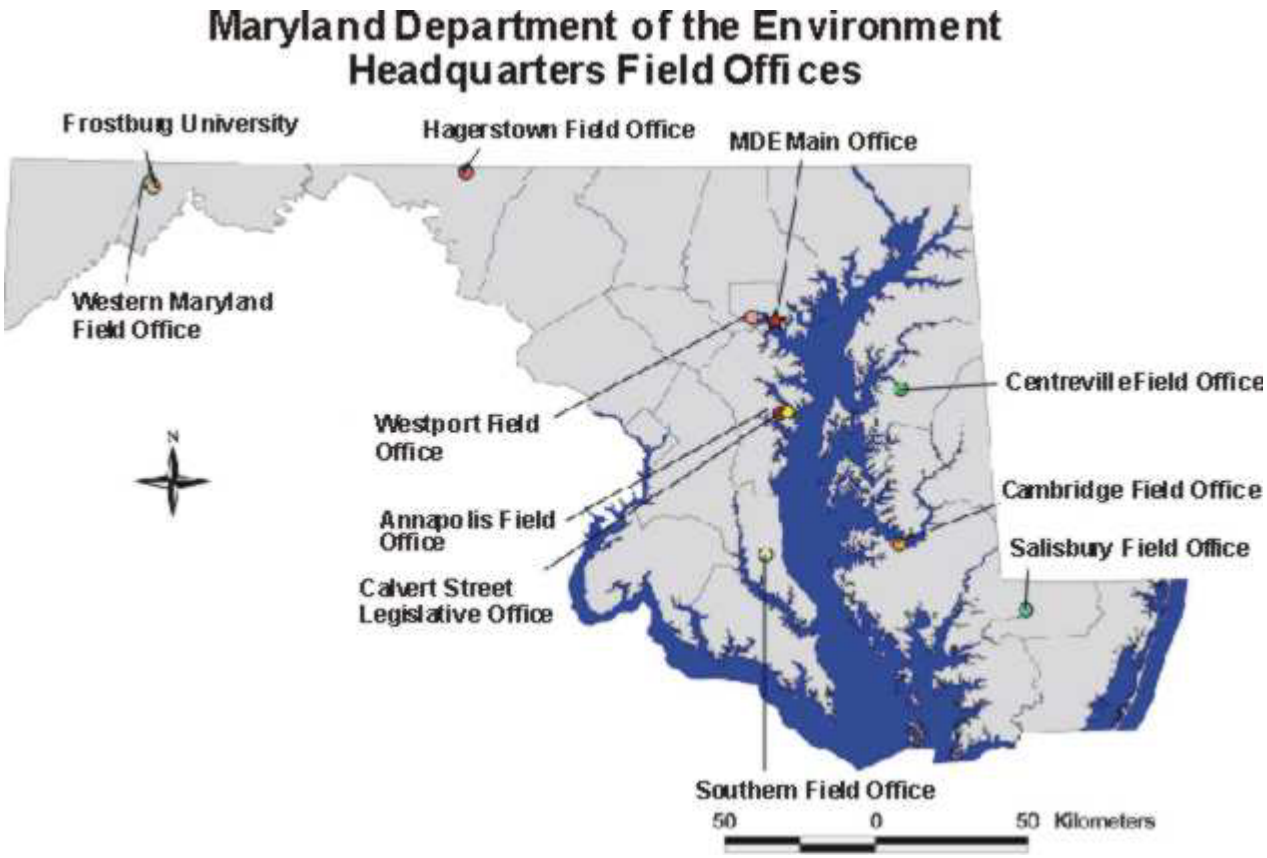
MDE Employee Outreach Activities

Dave A. Jarinko, with a real-time sound analyzer in hand, is MDE's 1999 Employee of the Year. Dave was recognized as a tireless and valuable employee, who provided innovative and high-quality customer service throughout the year.

"One of the most rewarding parts of my job is sharing the Chesapeake Bay with other Marylanders. The touch tank is like a portable Bay, providing an instant classroom to show citizens what we are working to protect."

- Rusty McKay

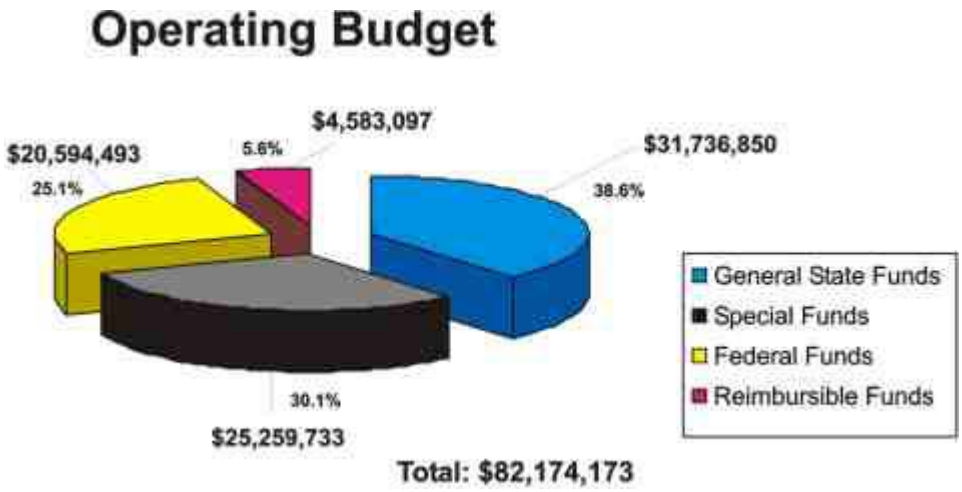
Angelo Bianca, Deputy Director of MDE's Air and Radiation Management Administration, planting a tree on Earth Day with assistance from student volunteers.

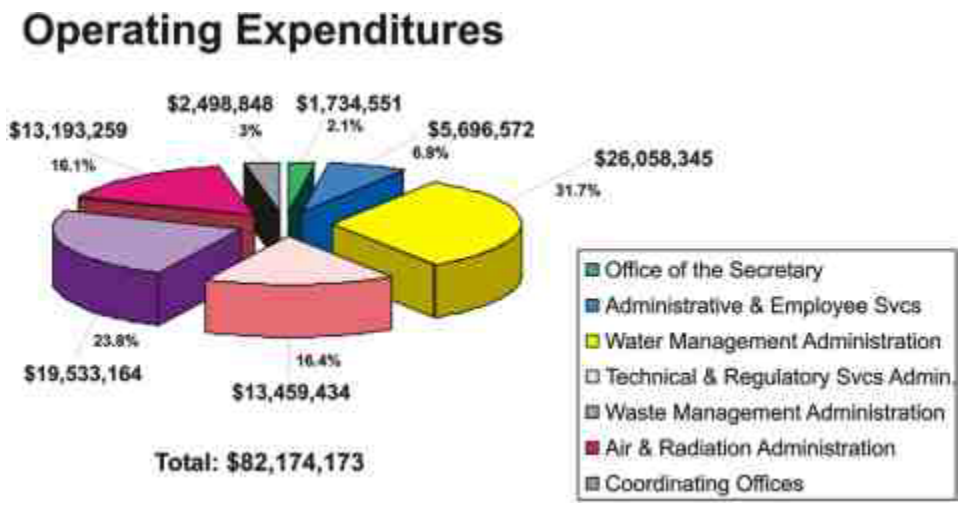


***MDE Main Office*:** 2500 Broening Highway Baltimore, MD 21224 410-631-3000 or 1-800-633-6101	***Centreville Field Office*:** 120 Broadway, Room 202 Centreville, MD 21617 410-758-5020	***Salisbury Field Office:*** District Court/ Multi-Service Building 201 Baptist Street, Suite 22 Salisbury, MD 21801 410-543-6703	***Western Maryland Field Office (Frostburg Armory):*** 160 South Water Street Frostburg, MD 21532 301-689-6104
Annapolis Field Office: 416 Chinquapin Round Road Annapolis, MD 21401 410-974-3238	***Frostburg Field Office:*** Dunkle Hall Frostburg State University Frostburg, MD 21532 301-687-4721	***Southern Maryland Field Office*:** Louis L. Goldstein State Office Building Suite 2700, 200 Duke Street Prince Frederick, MD 20678 410-414-3400	***Westport Field Office*:** 2103 Annapolis Road Baltimore, MD 21230 410-333-2950
***Cambridge Field Office*:** 407 Race Street Cambridge, MD 21613 410-901-4020	***Hagerstown Field Office:*** 18450 Showalter Road, Suite 107, Hagerstown, MD 21742 301-791-4787		

Operating Budget

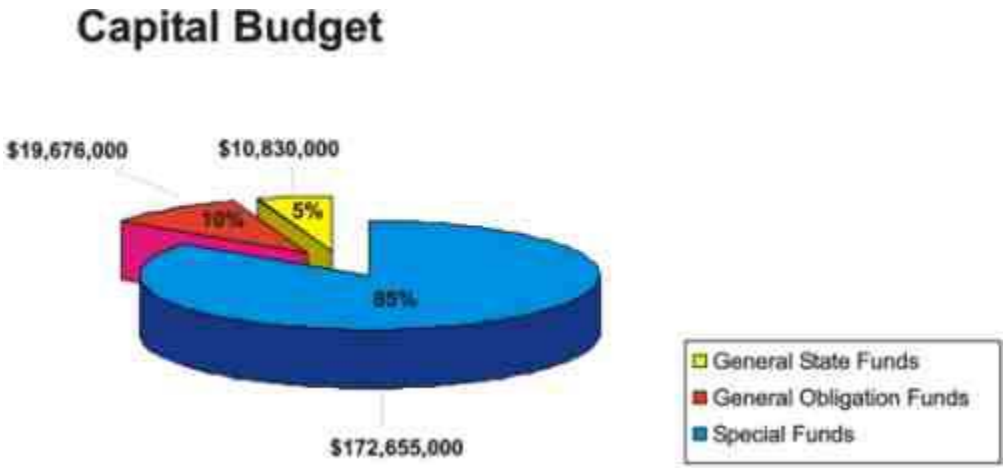
MDE's Fiscal Year 2000 operating budget was $82.2 million. These funds enable the Department to successfully harmonize environmental protection, public health, and economic development. The Department utilizes the operating budget to implement state and federal laws and regulations, and to fund programmatic activities like those found throughout this Annual Report.

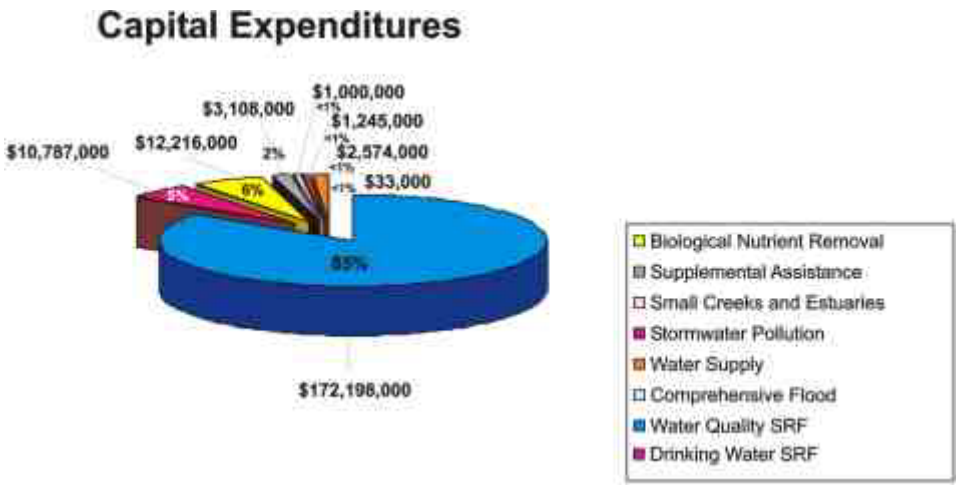




Capital Budget

In FY 2000, the Maryland General Assembly authorized more than $203 million in combined funds for Maryland's environmental protection programs. MDE's capital budget provides grants and loans to local governments. These activities include the Water Quality and Drinking Water Quality State Revolving Funds (SRF), Biological Nutrient Removal, Supplemental Assistance, Water Supply, Stormwater Pollution Control, Small Creeks and Estuaries, and Comprehensive Flood Management Programs.





Goal I

Encouraging Smart Growth and Community Revitalization and Protecting and Maintaining Maryland's Natural Resource Land Base

Smart Growth is a top priority in Maryland. In 2000, the John F. Kennedy School of Government at Harvard named Maryland's Smart Growth and Neighborhood Conservation Initiative a winner of its prestigious *"Innovations in American Government"* award. At the same time Governor Glendening has become a national leader in promoting Smart Growth, Maryland continues full scale implementation of Smart Growth policies to demonstrate what can be achieved with this incentive based approach to encourage more efficient growth.

Funding for conservation of rural legacy areas, increasing public transit ridership, realigning transportation spending to increase support of developed areas and encouraging people to purchase homes near their work are just a few of the Smart Growth policies in place across the State. MDE's programs are a vital component in the implementation of Governor Glendening's Smart Growth initiative. This goal supports MDE's mission by targeting growth toward Maryland's priority funding areas, thereby ensuring greater conservation of open space; shorter vehicle trips and better air quality; and more efficient use of taxpayer dollars for infrastructure such as water and sewer service. Our water and sewer funding programs expand growth opportunities in developed areas by directing grant and loan moneys for infrastructure to priority funding areas. Better land use planning can help achieve air quality goals more quickly by using land use as a tool to promote efficient development patterns and reduce commuting distances. In 2000, EPA recognized the role of Smart Growth and land use in improving air quality by awarding Maryland's Smart Growth Initiative a Clean Air Excellence Award for policy innovation. MDE's wetlands program helps ensure sensitive lands are protected. All of these efforts improve Maryland's environment. Smart Growth plays an integral role in seven of MDE's environmental and public health goals.

Additionally, Maryland's rich industrial history has resulted in a significant number of properties where investigation or cleanup of contamination is necessary to protect public health. MDE's Voluntary Cleanup, Brownfield Assessment, and Federal Base Realignment and Closure programs reduce threats to public health from exposure to soils, groundwater, and surface water contaminated by hazardous waste and other substances, while encouraging the revitalization of industrial and commercial properties. Redevelopment may require environmental cleanup, provides economic development benefits including new jobs and increased tax revenues, and promotes wise growth by using existing infrastructure and avoiding development in "greenfields."

Is Maryland Encouraging Smart Growth and Community Revitalization and Protecting and Maintaining Its Natural Land Base?

Voluntary Cleanup, Brownfields Assessments, and Federal Base Realignment and Closure Sites

Encouraging voluntary cleanup of sites ensures that potential environmental and health impacts are addressed and makes it more likely that properties will be redeveloped. Contamination from persistent, bio-accumulative, and toxic substances can degrade the environment. The presence of contaminated sites or sites perceived to be contaminated often lowers property values in surrounding areas.

Unless cleanup of historically contaminated sites is encouraged, new development will continue to occur outside of urban areas where environmental contamination and associated cleanup costs are less likely to be an issue.

The Voluntary Cleanup Program streamlines the cleanup process of eligible properties that are, or are perceived to be, contaminated by hazardous waste. MDE oversees cleanups and actively promotes the Program through seminars, workshops, and other outreach activities. The number of sites entered in the Voluntary Cleanup Program has steadily grown and this trend is expected to continue. In its first three years, the Voluntary Cleanup Program received applications covering 1,452 acres at 63 properties. In FY 2000, 12 sites covering 561 acres received "No Further Requirements Determinations" or "Certificates of Completion." This acreage exceeds the benchmark of 500 acres completed through the Voluntary Cleanup Program by FY 2001. (Figure 1.1)

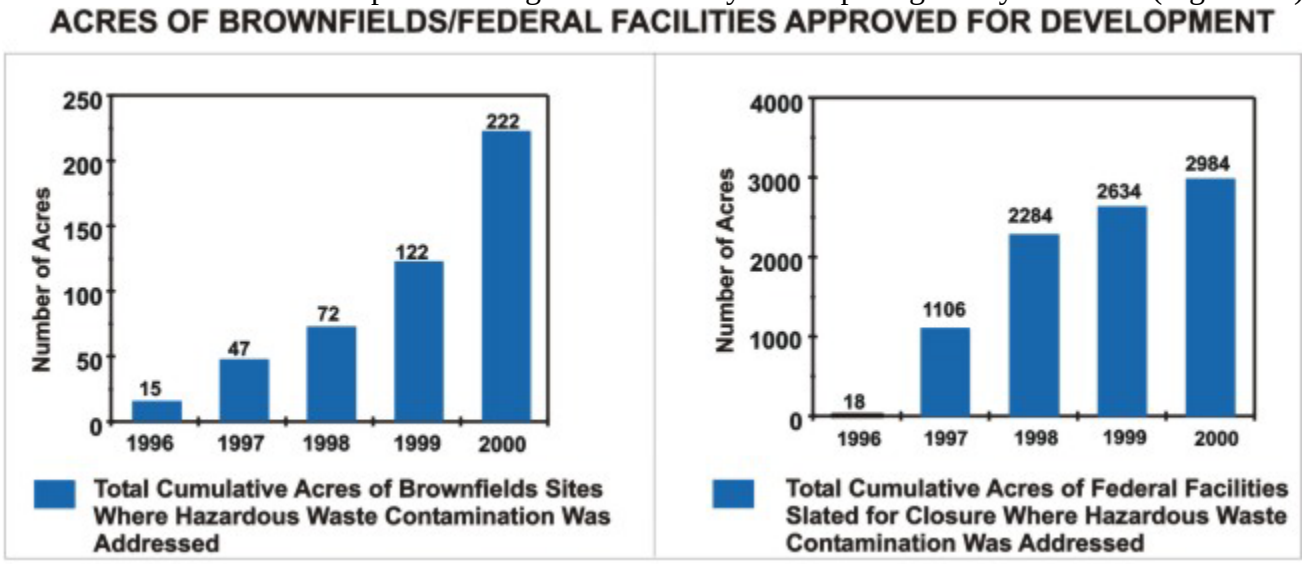


Figure 1.1

Recycling

Since 1988, the Maryland Recycling Act has required local jurisdictions to recycle a minimum of 15% or 20% of the wastes generated, depending on population. The FY 2000 statewide recycling rate was 36%, with Maryland citizens and businesses recycling over 2.1 million tons of waste. This rate surpasses the voluntary 29% statewide recycling benchmark for the third consecutive year. The Department's continued success is attributed to citizen participation and local government programs and activities. (Figure 1.2)

To raise the bar for additional Statewide waste diversion, during the 2000 legislative session, the re established a 40% voluntary waste diversion goal to be achieved by 2005. For the first time, the new diversion goal includes source reduction along with recycling as waste minimization strategies. MDE considers the adoption of this ambitious goal to be another measure of the Recycling Program's success.

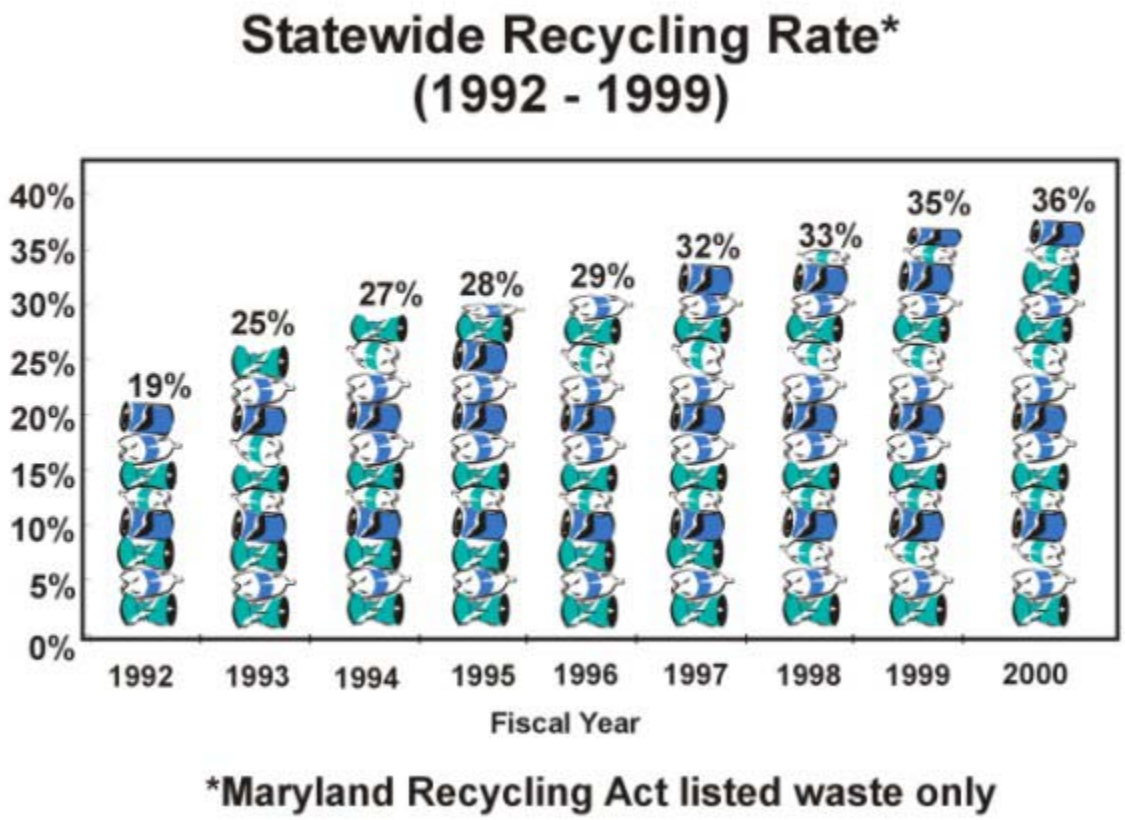

Statewide Recycling Rate*
(1992 - 1999)
40%
35%
30%
25%
20%
15%
10%
5%
0%
19%
25%
27%
28%
29%
32%
33%
35%
36%
1992
1993
1994
1995
1996
1997
1998
1999
2000
Fiscal Year
*Maryland Recycling Act listed waste only

Figure 1.2

Scrap Tire Cleanups

MDE's management strategies regarding scrap tires have had a dramatic impact over the last seven years. Many scrap tire dumps have been eliminated and over seven million scrap tires have been removed from more than 300 illegal scrap tire stockpiles since the program began. In the past year alone, approximately 535,000 tires were removed from the completed cleanup of 50 scrap tire stockpiles in the State. (Figure 1.3)

Beaverdam Creek Tire Site
BEFORE CLEANUP

Beaverdam Creek Tire Site
AFTER CLEANUP

What Actions is Maryland Taking to Protect and Maintain Maryland's Natural Resources Land Base and Encouraging Smart Growth and Community Revitalization?

Smart Growth

MDE implements "Smart Growth" by targeting water and sewer infrastructure funding to Priority Funding Areas, operating the Voluntary Cleanup Program, and continuously looking for other ways to support Smart Growth policies in other programs. (Figure 1.4) The MDE Smart Growth Team meets monthly to track progress of the implementation of smart growth and to work on new Smart Growth-related issues. With procedures in place to implement Smart Growth mandates, MDE is continuing employee education efforts toward creating a culture of Smart Growth and is focusing on reviewing existing programs to determine where there may be changes to further promote Smart Growth and achieve the new land use conversion goal in the Chesapeake Bay Agreement. For example, MDE added Brownfield Assessments of sites impacting water quality to the list of projects eligible for State Revolving Loan Fund low interest loans to facilitate reuse of those properties.

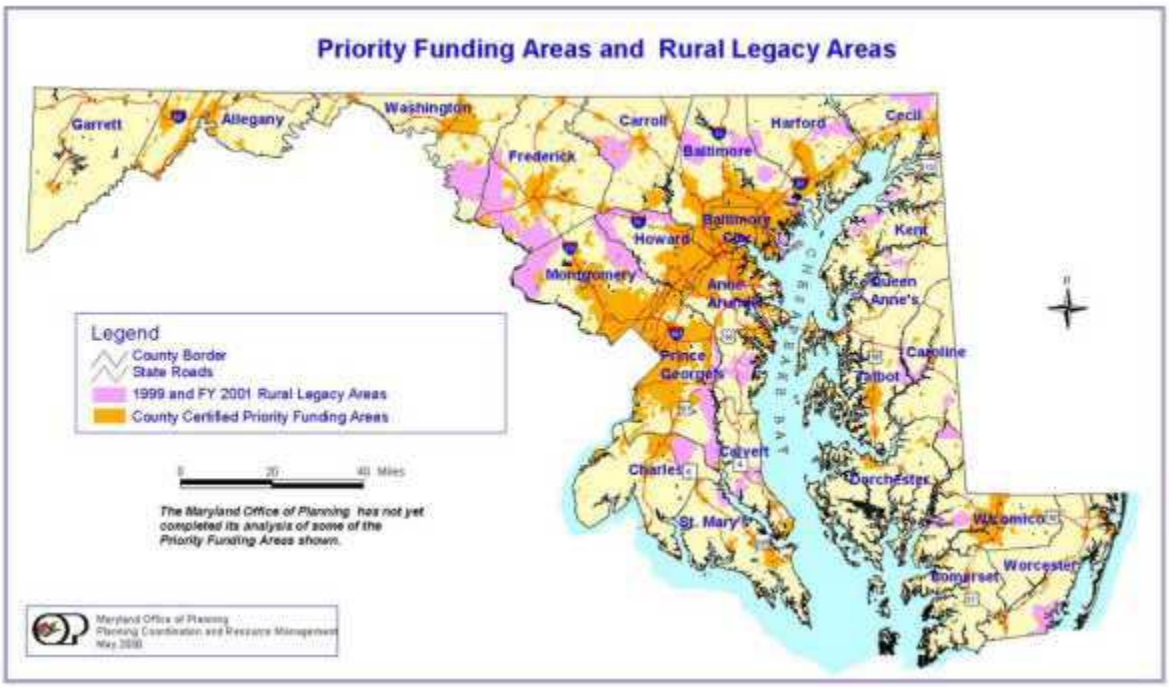


Figure 1.4

As mentioned, MDE provides capital funds to local governments, through grants and loans, for water supply and wastewater system improvements. MDE uses a multi-phase project review and tracking system to ensure that funding actions are consistent with Priority Funding Area designations. MDE also implemented a system to assure that if a project outside of a Priority Funding Area must be funded to address a public health threat, there is no other reasonable alternative to the proposed project and the project includes measures to mitigate any potential growth impacts.

Voluntary Cleanup Program

The former American Can Company site in Baltimore City (below), which remained vacant for over 10 years, was the first Voluntary Cleanup Program site to receive a Certificate of Completion for remediation of hazardous wastes, thereby allowing for redevelopment of the site. The cleanup was completed six months after approval of the cleanup plan and the property has been redeveloped into a viable commercial and retail complex in Baltimore's Canton area.

Environmental remediation activities required under the Voluntary Cleanup Program were also completed at the former CSX Bolt and Forge Property in Allegany County (next page) and construction of a shopping center and supermarket on the property is complete.

Highlights of the Voluntary Cleanup Program in FY 2000 include:

Using Environmental Protection Agency funds, MDE will capitalize a $1 million Brownfields Cleanup Revolving Loan Fund pilot in Baltimore and Prince George's Counties. MDE will oversee cleanup activities at sites in those counties where public or private owners use low interest loans from the Fund for cleanup and redevelopment of multiple brownfields properties. Additionally, six Base Realignment and Closure facilities covering 1,991 acres, or 60.52% of the total federal facilities acreage expected to be transferred by 2001, are addressing hazardous waste contamination to allow for transfer of the properties. An additional 1,299 acres are scheduled for completion by the end of 2001. The program is on track to meet the goal of cleaning up and approving for reuse 100% of federal facilities slated for closure by 2001. For more information on MDE's Voluntary Cleanup Program please visit MDE's website at *www.mde.state.md.us*.

"Brownfields is an important element of the Governor's Smart Growth policy to level the playing field of public policy to promote community revitalization. In the two years, we can point to hundreds of millions of dollars of private investment creating thousands of jobs due to the positive effect of the Brownfields initiative.

- Carl W. (Bill) Struever

American Can Co. - BEFORE

American Can Co. - AFTER

In December 1999, MDE issued a "No Further Requirements Determination" to Streuver Brothers, Ecclels and Rouse after review of environmental assessments of a 26-acre property in Baltimore City formerly owned by the Proctor and Gamble Corporation. Redevelopment plans include renovation of five existing buildings on the site contributing approximately $63 million to the economy and creating 1,700 jobs related to future use of the property as retail and office space.

"The Voluntary Cleanup Program offered an efficient, straightforward approach to cleaning up and redeveloping the site."

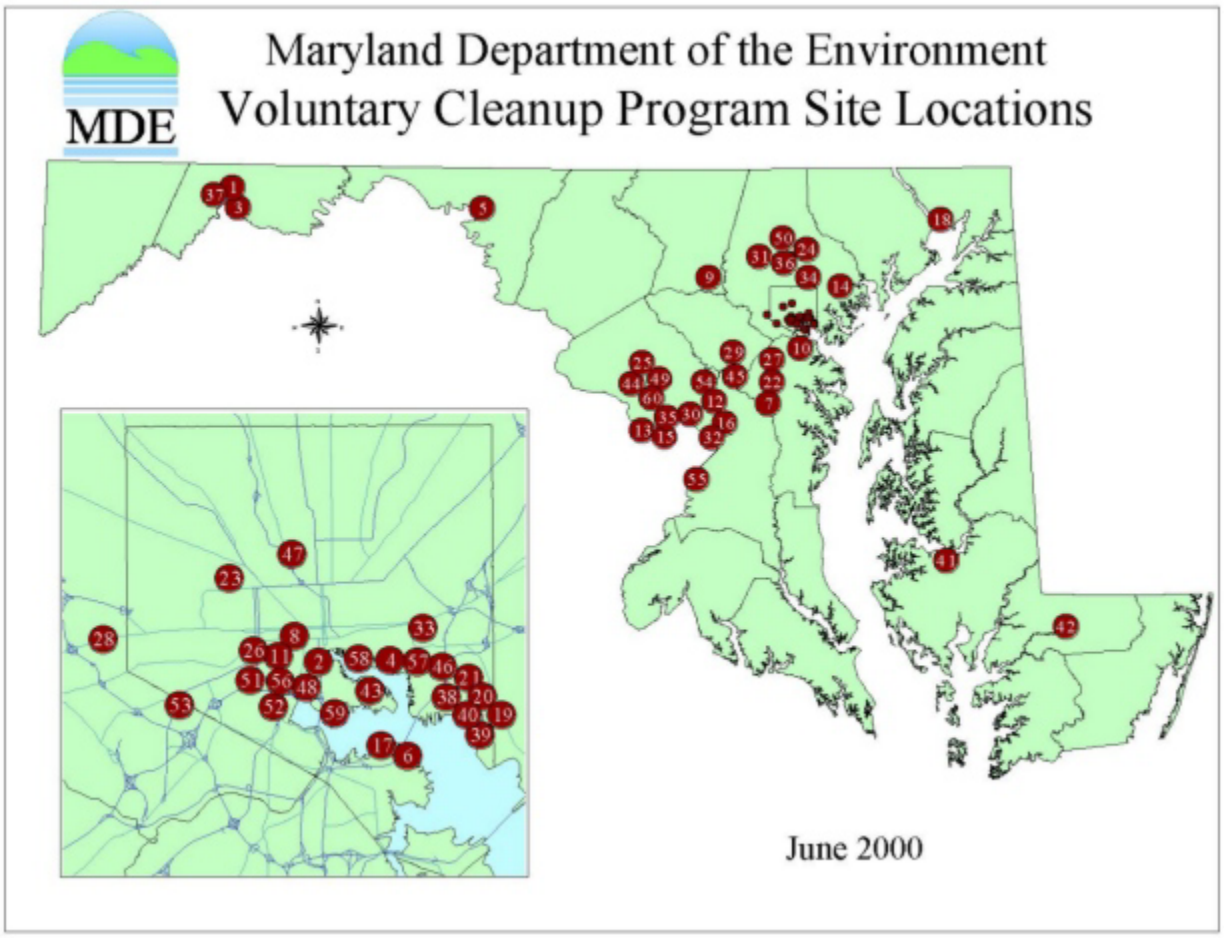
- Nelson Trimmor, Ahold Corporation

CSX Bolt and Forge - BEFORE

CSX Bolt and Forge - AFTER

Former Proctor & Gamble Building

Artist rendition of the renovation



Voluntary Cleanup Program Sites June 2000

1. CSX Former Bolt and Forge Site | Cumberland | 33
2. Parker Metal Decorating Corp. | Baltimore | 0.7
3. PPG Property | Cumberland | 150
4. American Can Company | Baltimore | 4.3
5. Engineered Polymer Solutions, Inc.| Williamsport | 8.5
6. Port Liberty Industrial Center | Baltimore | 23.8
7. G & H Partnership | Gambrills | 38.3
8. Camden Crossing (Barre Station, Koppers) | Baltimore | 8.6 37
9. Carrolltown Center | Eldersburg | 31.8
10. Baymeadow Property | Glen Burnie | 12
11. Baltimore Camden Yards | Baltimore | 5

12. Beltsville Industrial Center | Beltsville | 0.8
13. 5221 River Road | Bethesda | 2.3
14. Redland Genstar- White Marsh | White Marsh | 103.9
15. 5450 Butler Road | Bethesda | 2.8
16. Riverdale Plaza | Riverdale | 11
17. Kurt Iron & Metal, Inc. | Baltimore | 10.4
18. Occidental Chemical Corporation | Perryville | 125.7
19. Point Breeze Business Center (C1,C2,C4) | Baltimore | 54.3
20. Point Breeze, Business Center (D2) | Baltimore | 15.7
21. Point Breeze Business Center (D1,D5) | Baltimore | 14
22. The Hardaway Company | Odenton | 9.2
23. Inland Leidy, Inc. | Baltimore | 1
24. Yorktowne Plaza | Cockeysville | 10.5
25. Former Maryland Wood Preserving | Rockville | 2.1
26. 1600 -1606 Bush Street | Baltimore | 0.4
27. Kop-Flex | Hanover | 25
28. 40 West Auto Park Inc | Baltimore | 3.6
29. PATS, Inc. | Columbia | 2.7
30. Silver Spring Redevelopment Project | Silver Spring | 2.4
31. Har Sinai Property | Baltimore | 17.6
32. Hyattsville Gas Former MGP | Edmonston | 13
33. Former Esskay Plant | Baltimore | 12.7
34. Arcade Towson/Radio Park | Towson | 22.1
35. Former Bell Cleaners | Bethesda | 1
36. Texas Maintenance Yard | Cockeysville | 11.2
37. Country Club Mall | LaVale | 64.4
38. Point Breeze Business Center (D1A) | Baltimore | 5.6
39. Point Breeze Business Center (D3) | Baltimore | 7.4
40. Point Breeze Business Center (C3) | Baltimore | 12.7
41. Eastern Shore Hospital Center | Cambridge | 351
42. Wawa Food Market | Salisbury | 1.9
43. Proctor & Gamble | Baltimore | 13

44. Rockville Post Office | Rockville | 0.6
45. Laurel Building Supply | Laurel | 2
46. Crown Simplimatic, Inc. Facility | Baltimore | 13.6
47. Kirk-Steiff Silver Building | Baltimore | 2.5
48. 2110 Haines Street | Baltimore | 3.1
49. Rockville Metro Plaza | Rockville | 3.5
50. Former Bausch & Lomb Diecraft Plant Sparks | Sparks | 27.9
51. Montgomery Park Business Center | Baltimore | 27.5
52. Westport Junction Depot | Baltimore | 2.9
53. Baltimore Goodwill Industries | Baltimore (Arbutus) | 3.9
54. Briggs Chaney Plaza | Silver Spring | 18.2
55. Oxon Hill Plaza | Oxon Hill | 11.4
56. Valspar Baltimore Plant | Baltimore | 2.6
57. National Bohemian Brewery | Baltimore | 1.3
58. S. Caroline Street (801) | Baltimore | 1.3
59. Port Covington | Baltimore | 68
60. Seven Locks Plaza | Potomac | 15

Total: 1,452.5 Acres

Solid Waste Management

Solid waste management planning maintains the natural resource base by ensuring that wastes are safely disposed. MDE is responsible for reviewing and approving Solid Waste Management Plans for local jurisdictions. These 10-year plans ensure that each jurisdiction has adequate facilities available to responsibly collect, manage and dispose of their solid waste. The plan also describes each county's recycling program and documents their progress toward achieving the Maryland Recycling Act's diversion goals. Each Solid Waste Management Plan is required to be updated every three years, if necessary, to reflect significant changes in a county's program.

MDE was a member of the planning committee for the third annual "America Recycles Day" celebration on November 15, 1999. The major highlight of the celebration was the Maryland Recycling Trail featuring nine Maryland manufacturers that used recycled materials and nine processing facilities. Each stop along the trail offered tours and information about the economic benefits of recycling. Other MDE 1999 "America Recycles Day" events included co-sponsoring WJZ television's public service announcement campaign stressing the importance of recycling and bringing the tall ship H.M.S. Rose to Annapolis. The ship, whose sails are partially composed of 126,000 recycled plastic bottles, served as a backdrop for Governor Glendening's "America Recycles Day in Maryland" proclamation.

Photo right: Governor Glendening addresses the audience during *America Recycles Day* in Annapolis, MD

Recycling and source reduction divert materials from solid waste disposal facilities, extending landfill life, limiting the potential for groundwater and air pollution, and preserving land in its natural state. MDE promotes recycling and source reduction by providing technical, educational, and outreach assistance, working with other State agencies to increase the volume of materials recycled in these agencies, and by partnering with the Department of Business and Economic Development, Maryland Environmental Service, and Northeast Maryland Waste Disposal Authority to develop markets for recyclable materials. For more information on MDE's Recycling Program, please call 410-631-3314, or visit MDE's website at *www.mde.state.md.us.*

Outreach

MDE's Recycling Program has re-focused its emphasis on technical, educational and outreach activities as the primary vehicle to keep recycling and source reduction initiatives visible throughout the State. The Program has developed extensive print and electronic information to share with the public, local government, and private industry.
Highlights include:

- Establishing a Source Reduction Credit System - Many local solid waste and recycling managers are putting increased emphasis on source reduction activities in an effort to reduce the amount of material entering the waste stream. Maryland is now one of the few states in the nation that actually provides measurable credit for source reduction efforts. The credit system is in its first year of implementation, and its results will be reflected in the calculation of Maryland's 2000 waste diversion rate.
- Redesigned Website - The Recycling Program is completing a major overhaul of its website to provide timely information and assistance on recycling and waste diversion to Maryland's citizens, businesses and local governments. Visit MDE's website at *www.mde.state.md.us* for more information.
- MDE in the Classroom - Teaching school children about the importance of recycling and proper solid waste management is one of the best ways to instill environmental awareness at an early age. The Recycling Program and Captain Cleanup, MDE's mascot, have been invited to schools throughout Maryland to present an interactive, hands-on lesson on what happens to the environment with irresponsible solid waste management. MDE's website has more information on this program. Captain Cleanup can be reached via e-mail at *cptcleanup@mde.state.md.us*, or call 410-631-3690.

Captain Cleanup, MDE's mascot, talks to a class about recycling.

County recycling coordinators are energetic and innovative individuals. They are responsible for planning, implementing and constantly improving their county recycling program. They act as public relations agents, promoting their programs in many ways to keep recycling foremost in the minds of Maryland's residents and businesses. Their dedication has reaped huge benefits for the State. In 2000, Marylanders recycled over 2.1 million tons of materials for a Maryland Recycling Act rate of 36%! To contact your recycling coordinator, please call MDE's Recycling Program at (410) 631-3315 or visit the web site at mde.state.md.us/was/recycle/coordinators.htm

Scrap Tire Cleanup

Cleaning up stockpiles of tires reduces the potential for groundwater and air pollution, protects and maintains the natural land resource base and enables property to be appropriately reused. To cleanup stockpiled tires, MDE issues licenses for the collection, hauling, recycling, and processing of scrap tires to ensure proper disposal of all scrap tires and to prevent new illegal scrap tire stockpiles. Since 1992, Maryland has charged a $1 fee for each new tire purchased in the State. The fee is used to initiate stockpile cleanups, support licensing activities, fund innovative research and uses for scrap tires, support the enforcement and compliance program, fund projects to reduce, recover, and/or recycle scrap tires, and for projects like the ones described below. Because of the Program's success, the Maryland General Assembly has reduced the fee to 40 cents per tire effective July 1, 2000.

Secretary Nishida participates in a scrap tire cleanup with Summer Youth Employment Project staff.

MDE conducted 1,073 scrap tire facility inspections, provided 37 compliance assistance actions, issued 5 corrective actions, obtained 1 injunction, took 12 penalty actions, and made 2 referrals to the Attorney General for possible criminal action. MDE also actively seeks opportunities for recycling scrap tires, such as to use for energy recovery, constructing scrap tire playgrounds, and to use in landfill construction. Highlights for FY2000: MDE also actively seeks opportunities for recycling scrap tires, such as to use for energy recovery, constructing scrap tire playgrounds, and to use in landfill construction. Highlights for FY2000:

- More than 1.7 million scrap tires were used as supplemental fuel in cement plants and waste-to-energy facilities;
- A new scrap tire playground was constructed in Elk Neck State Park in Cecil County, raising the number of Maryland State Park scrap tire playgrounds developed, using the scrap tire fund to eight;
- MDE, the Maryland Environmental Service, and the Maryland Department of Education worked together to construct and/or renovate 10 playground facilities at various Maryland Public Schools using recycled tires and recycled tire materials;
- A project using recycled scrap tire crumb rubber to construct new equestrian arenas at the Fairhill Equestrian Center in Cecil County was initiated;
- Construction of a new cell at the Garrett County Landfill, which uses tire chips as a protective layer for the bottom liner and leachate collection system, was completed; and
- Preliminary design work was initiated for landfill closure caps using scrap tire materials for the Hobbs Road Landfill in Caroline County, the Westover Landfill in Somerset County, and the Westernport Landfill in Allegany County.

Governor Parris N. Glendening initiated the Summer Youth Employment Project in June 1997 to address the unique environmental and public health challenges presented by the illegal dumping of scrap tires. MDE, along with the Departments of Natural Resources and Juvenile Justice, Baltimore City, and various local

governmental agencies have been working together to employ over 200 youth and remove approximately 80,000 tires from publicly owned properties. The project is entering its fourth year.

"We have the opportunity to tackle two problems at once," **said Governor Glendening.** *"The first is providing youth with employment opportunities during the summer. The second is a concerted effort to remove the pernicious threat to public health and the environment posed by illegally dumped scrap tires."*

What Challenges Does Maryland Face While Protecting and Maintaining Natural Resources Land Base and Encouraging Smart Growth and Community Revitalization?

Smart Growth

The most significant challenge facing Maryland is the projected increase of one million residents over the next twenty years. If this population increase utilizes current patterns of development, more farmland and open space will be consumed, the costs of providing necessary infrastructure such as water supply and sewage treatment and environmental protection, in general, will be higher, and there will be many other negative environmental consequences. Additionally, unless historically contaminated sites are remediated, development will continue to move away from urban areas in an effort to locate uncontaminated real estate.

During six months in 1999, over 5,000 people left Baltimore City, over 3,000 septic system permits were issued, and over 10,000 acres of forests and farmlands were lost. If current land use trends continue, Maryland may lose up to 500,000 acres of forest and farmland over the next 25 years.

Recycling

Reaching the new 40% voluntary waste diversion goal by the year 2005 poses another challenge for the State. Some issues that make achieving this goal a challenge include: limited County resources for plan development, the economic attraction of out-of-state disposal of solid waste, the lack of regional solid waste facilities as backup to out-of-state disposal, community acceptance of siting solid waste facilities, and costs associated with marketing recyclable materials.

Scrap tire cleanup in Baltimore

Scrap Tire Cleanup

In accordance with guidance from the 2000 Maryland General Assembly, MDE will be accelerating the expenditure of funds in the State Used Tire Cleanup and Recycling Fund to cleanup remaining illegal scrap tire stockpiles; to implement scrap tire projects to reduce, recover, and recycle scrap tires; and to expand the scrap tire recycling system on a regional basis to provide additional processing and recycling capacity to manage more effectively the ongoing generation of tires.

The VCP Program

The climate for brownfields redevelopment has greatly improved. However, several challenges remain. One is the availability of commercial financing for these projects, which are sometimes viewed as risky because of potential environmental costs. To address this challenge, MDE has worked with the financing community to ensure that the process and fixed timelines are widely known. Available infrastructure, neighborhood safety, and a readily available workforce are a few of the non-environmental issues that also can impact the redevelopment potential of a brownfields site.

Tips to Protect and Maintain Maryland's Natural Resources Land Base and Encourage Smart Growth and Community Revitalization

Smart Growth Tips:

. Live near your work
. Use public transportation
. Telecommute when appropriate, and if you must drive, carpool
. Consider purchasing a new home in a renovated community
. Consider renovated properties when establishing a new business

Recycling Is Important Because It:

. Reduces the need for landfilling and incineration
. Prevents pollution caused by the manufacturing of products from virgin materials
. Saves energy
. Decreases emissions of greenhouse gases that contribute to global climate change
. Decreases the use of natural resources such as timber, water and minerals
. Helps sustain the environment for future generations

To Protect Maryland's Natural Resources:

. Choose products and containers that are recyclable. Participate in your community's recycling program.
. Reduce the amount of unnecessary packaging. Buy products that are reusable or packaged in bulk, or buy the large, economy size.
. Leave mowed grass clippings on the lawn to decompose and add nutrients to the soil. Start a compost pile with leaves, grass, and shrub
. clippings, and some food scraps. Reuse or recycle newspaper, brown paper bags, packaging peanuts, and other packaging materials.
. When possible, use rechargeable batteries. This practice will help eliminate toxic metals in our soil and groundwater.
. Make sure your vehicle is well-maintained and isn't leaking any fluids. Petroleum products can contaminate the soil and groundwater.
. Try using natural household cleaners, such as soap and water, instead of chemical cleaners. If you do need to use products with hazardous components, follow instructions carefully. Any unused portion can be shared with neighbors or recycled. Do not pour chemical cleaners down the drain or on the ground.
. Maintain and repair durable products and keep appliances in good working order. Buy high-quality, long-lasting tires, and follow maintenance procedures. This will extend tire life and reduce tire wear.

Become informed about your community, attend public meetings, and get involved. Please visit MDE's website at www.mde.state.md.us.

Goal 2

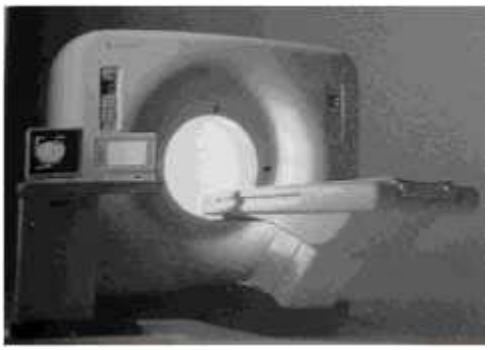
Ensuring that Marylanders Are Not Exposed to Unnecessary Levels of Radiation

Under both federal and State law, MDE is charged with ensuring that the public is protected from unnecessary levels of radiation. The general public and the environment are at risk if the users and handlers of radioactive materials and radiation producing devices fail to recognize potential radiation hazards and fail to follow proper radiation safety practices and procedures.

To prevent unnecessary exposures to radiation, the Department inspects x-ray machines at dental and veterinary facilities every three years to determine whether the machines are performing according to rigid specifications and whether the machine operators are following proper safety procedures. The Department also certifies the performance of medical, industrial and academic x-ray machines following inspection by State-licensed inspectors and performs inspections of State mammography facilities under contract with the Department of Health and Human Services (DHHS), of the Federal Food and Drug Administration. Facilities that use radioactive materials are issued licenses and are inspected periodically by the Department to determine whether the facility is using proper safety procedures. Finally, the Department regularly participates in response exercises that simulate an emergency release of radiation to ensure rapid and effective response capabilities.

Are Radiation Levels Safe in Maryland?

Radiation is often a misunderstood public health hazard, in part because exposure to it can be both harmful and beneficial. Natural radiation comes from outer space, the ground, and even from within our bodies. Radiation is all around us and has been present since the Earth was formed, though humans did not discover it until 1896. Because scientists in recent decades have found many ways to use radiation for health care, research, academic, and industrial purposes, citizens can easily be exposed to more than just background radiation.



Computed Tomography Scanner

Radioisotopes and x-ray machines emit varying levels of energy. This energy interacts with cells of the body and can disrupt cell function or totally destroy the cells. Severe damage to body tissue and vital organs can occur under extreme exposure conditions. At what point exposure becomes an issue of safety is a function of dosage and duration. Most people typically believe that radiation levels are only unsafe when high doses are administered over a short period of time. The cumulative amount of radiation one receives, however, is an

equally important factor in determining whether radiation levels are safe. Given that Americans receive more than 200 million x-rays each year and the specific dosage and the cumulative amount received is not generally tracked by a single health care provider, it is important that the amount of radiation that an individual is exposed to during the course of a lifetime be minimized. MDE's focus when regulating x-ray machines is to ensure that the equipment is functioning properly so that the radiation dosage applied is appropriate, and to ensure that proper operating procedures are followed.

Additionally, radioactive elements are used in cancer therapy and treatment, in industrial operations and in nuclear power plants. In medical therapy applications, the potential exists for the administration of improper dosages (both too much and too little). Although rare, these instances are the result of both equipment malfunctions and operator error. Similarly, there is a potential for the escape of large amounts of radiation into the atmosphere if there is an accident at a nuclear power plant. Operational and physical plant safeguards and emergency planning are key to minimizing the potential for occurrence of an accident and for harm to the public health.

What Action Is Maryland Taking?

X-ray Facilities

There are more than 12,000 x-ray machines in use in Maryland, including dental, veterinary and mammography machines, general-use machines at hospitals, and particle accelerators. Instances where an individual has been severely harmed as a result of a single application of radiation, for either diagnostic or therapy-related purposes, are rare. However, because cell damage from radiation is cumulative, another issue of concern is the administration of radiation dosages beyond minimal levels.

Dental x-ray machines are of particular concern in this regard, for the Department has found that, only one of every six dental facilities is meeting all significant requirements at initial inspection. After notification to correct deficiencies, most dental facilities make the necessary improvements and meet all requirements within 45 days. Typical deficiencies found that can impact on a patient include excessive accuracy errors in the equipment, failure to change developing solutions at the proper frequency (a higher than minimum dosage, then, may be needed to get a clear picture), and underdeveloped film (a second x-ray, then, may be needed). Other deficiencies that are found do not have any effect on a patient, but can adversely impact the person administering the x-ray. There are more than 7,500 dental x-ray machines registered in Maryland and MDE inspects about one-third of these machines each year.

Dental X-ray

Because of the importance of dental facilities, the Department is committed to working with this particular regulated community to improve the compliance rate. Since the Department inspects these facilities only once every three years, a secondary aim is to ensure that these facilities operate without significant deficiencies on a continual basis. The Department expects that by working closely with the Dental Board and the Dental Association, that the compliance rate during initial inspections will reach acceptable levels and will be

maintained. In contrast to dental facilities, mammography facilities have a 60% initial compliance rate, which increases to 100% when corrections made within five days of inspections are considered.
Other facilities that use radiation machines, such as veterinary, medical, and industrial facilities, have compliance rates lower than mammography facilities but higher than dental facilities. The Department is taking steps designed to increase the compliance the rate at these facilities as well. For more information about compliance rates, please go to MDE's website at www.mde.state.md.us, to see MDE's Enforcement and Compliance Report for FY2000.

Radioactive Materials Users

The State currently licenses approximately 1,000 radioactive materials facilities. Typical licensees include hospitals, private medical practices, research firms, academic institutions, radiation device manufacturers, and industrial users such as incinerators and road contractors. The number of facilities has been increasing slightly each year as more applications for the use of radiation are developed and more activity employing the use of radiation devices is occurring. Inspections of these facilities to ensure compliance with license conditions range from quarterly for one particular licensee, to once every five years, depending on the potential hazard of the radioactive materials activities and the enforcement history of the user and of the facility. The compliance rate for licensees is about 70%. The majority of noncompliant situations involve instances where required leak tests were not completed in a timely manner, transportation and use records were deficient, or relocation notifications requirements were not fulfilled in a timely manner.

The Department licenses and inspects facilities that use radioactive materials under an agreement with the U.S. Nuclear Regulatory Commission (NRC). The Department's radioactive materials licensing and inspection program is periodically evaluated by a team consisting of NRC and another State's staff. During one of its periodic reviews in 1999, the NRC found the Department's program to be both "adequate" to protect the public health and "compatible" with the NRC's regulatory program. The NRC will conduct a follow-up review in 2001.

The Department is working to improve the timeliness and technical quality of its licensing and evaluations of "sealed sources and devices." These are individual pieces of equipment (the "device") that contain an enclosed radioactive material (the "sealed source"). These devices need approval for use nationwide.
Examples include radiography cameras used for structural analysis of bridges and buildings, moisture/density gauges used for analysis of soils and roadbeds under construction, and teletherapy equipment used for cancer treatment.

Responding to Radiation Emergencies and Participating in Emergency Exercises

The Department responds to radiation emergencies involving medical, industrial or transportation events. A typical event involves a lost, stolen or damaged device containing a radiation source. All three situations present an opportunity for the radioactive isotope to become unshielded, which then presents a serious exposure risk to nearby individuals. Whenever the Department is notified that a device is lost, stolen or damaged, the Department investigates and notifies the public and appropriate law enforcement agencies. Once the device is recovered or salvaged after being damaged, the Department checks it for leakage and ensures that it is transported to the appropriate location for repair or storage.

The Department is also prepared to respond to emergency radiation release events at nuclear power plants. To prepare for emergencies at nuclear plants, the Department participates in radiation response exercises involving hypothetical releases of radiation at operational facilities. Included in these exercises are a variety of federal agencies such as the Nuclear Regulatory Commission (NRC), Federal Emergency Management Agency (FEMA), and the Department of Energy (DOE); State agencies such as the Department of Natural Resources (DNR), the Department of Health and Mental Hygiene (DHMH), and the Maryland Emergency Management Administration (MEMA); and the nuclear power utilities.

Recently, the Department participated a radiation response exercise for the Peach Bottom facility located along the Susquehanna River in Pennsylvania, just north of the Maryland border. The Department received a favorable evaluation of its actions during the exercise.

What Challenges Does Maryland Face?

As radiation machines and devices become more sophisticated and complex, there is a need to keep abreast of these technological improvements so that adequate reviews can be performed. Since the goal is to avoid unnecessary exposure to radiation, it is imperative to maximize the compliance rate of the regulated community. A noncompliant situation generally means that conditions exist which could allow radiation exposure to occur beyond minimum levels. This is very important since the time between inspections can be years.

Maintaining the NRC's "Adequate and Compatible" finding may be a challenge due to the growing number of radioactive materials users. If the majority of new users involve the more complex type of sources, their presence could overload the capabilities of the existing licensing and inspection staff. To guard against this, the Department will track the number of new sources, assess the workload impact on the operation of the Department's radiation control staff, and continue to seek adequate federal and State funding for needed staff.

Goal 3

Ensuring Safe and Adequate Drinking Water

The Maryland Department of the Environment (MDE) is charged with ensuring that all Marylanders have a safe and adequate supply of drinking water. The Department has programs to oversee both public water supplies, which serve about 84% of the population's residential needs, and individual water supply wells, which serve citizens in most rural areas of the State. Marylanders use both surface water and ground water sources to obtain their water supplies. Surface water sources such as rivers, streams, and reservoirs serve approximately two-thirds of the State's 5.1 million citizens. The remaining one-third of the State's population obtains their water from underground sources. Many of us take for granted a safe and abundant supply of drinking water. However, the drought of 1999 and associated restrictions on nonessential water uses brought home the lesson that our water supplies are not limitless and require good stewardship.

Is Maryland's Water Safe to Drink?

The quality of water provided by Maryland's public drinking water systems, which serve 84% of Maryland residents, is very good. MDE is responsible for ensuring that public water systems (water systems that serve 25 or more people per day) meet strict drinking water standards. Currently, more than 80 contaminants are regulated for community water systems. In FY 2000, 99% of the population served by community water systems received water that met all current drinking water quality standards, except for lead and copper.

Maryland adopted new lead and copper regulations in 1995. Treatment improvements for lead and copper are now in progress, and about 86.2% of community water systems (serving 97% of the population) currently meet the standards for these contaminants. The Department provides technical assistance to water systems to improve treatment as part of a cooperative effort between MDE, water systems, laboratories, and the Maryland Rural Water Association. Beginning in October 1999, all public water systems in Maryland were required to distribute a Consumer Confidence Report to their customers. This water quality report provides consumers with information about their drinking water quality, including a list of substances that have been detected in their drinking water, information about the potential health risks of those contaminants, and information on water treatment and possible sources of drinking water contamination for their water system. This reporting is similar to the required reporting of ingredients found on most food products with which we have become familiar.

Naturally occurring ground water in private wells is often potable straight from the well, although private wells may need treatment depending on the aquifer that is utilized. MDE works with local environmental health agencies to oversee protection programs for individual water supply wells and assists homeowners to address any known water quality problems, including recommending treatment where appropriate. For instance, recent water quality surveys of naturally occurring radionuclides have shown that ground water in northern Anne Arundel County can have elevated levels of radium and Piedmont aquifers of central Maryland can have elevated radon levels. MDE and county health officials have worked to educate citizens in these areas about potential health effects and the most effective treatment processes for these contaminants. The most common treatments used by homeowners are pH adjustment, iron removal, and softening.

Does Maryland Have An Adequate Supply of Drinking Water?

Generally, Maryland's water resources are sufficient to provide an adequate source of drinking water. On average, the State receives over 40 inches of precipitation each year, which replenishes the reservoirs, streams, and aquifers serving as sources for Maryland's drinking water.

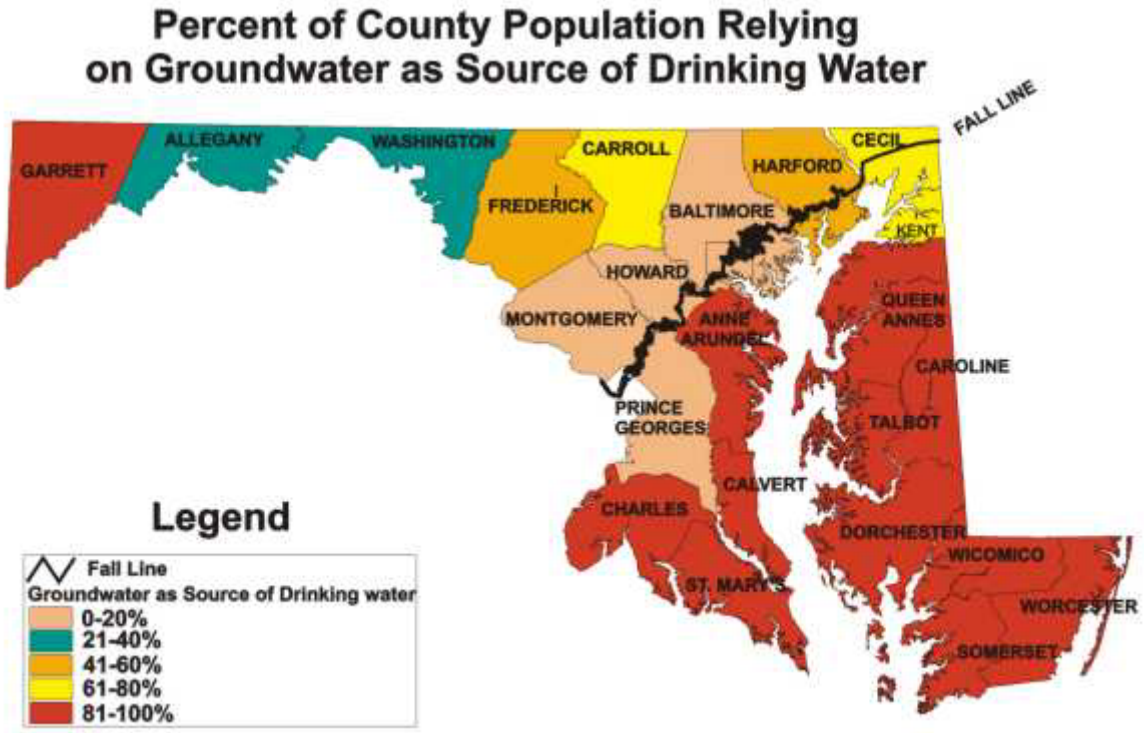
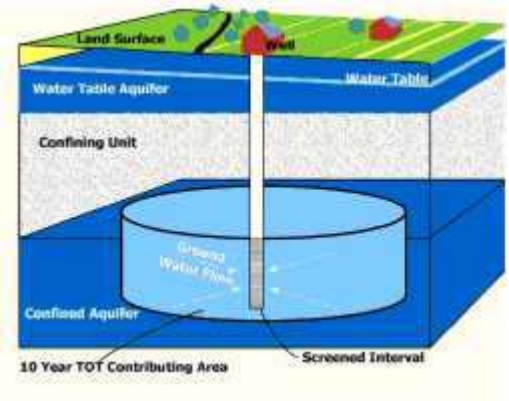


Figure 3.1

There are distinct geographic differences among Maryland's water sources. Maryland's two largest water systems, operated by the City of Baltimore and the Washington Suburban Sanitary Commission (WSSC), provide water for about 60% of Maryland's residents. The main sources of supply for these two systems are reservoirs on the Gunpowder and Patapsco Rivers and the Potomac River. The Susquehanna River serves as a back-up supply for Baltimore City, while Seneca Lake and Jennings-Randolph Lake augment the Potomac River under low flow conditions.

Areas away from Maryland's major population centers usually rely on ground water, particularly in Southern Maryland and on the Eastern Shore where ground water aquifers are very productive (Figure 3.1). In these regions of Maryland, ground water supplies are frequently protected by layers of clay called confining units (Figure 3.2). About 500,000 residents relying on ground water from public systems receive their drinking water from deep, naturally protected, confined aquifers. In the central and western areas of Maryland and in the vicinity of the Columbia aquifer on the Eastern Shore, ground water aquifers are not protected by confining layers and are more susceptible to contamination from activities at the land surface.

The geographic differences in water sources across Maryland reflect a wide variation in water availability. While sufficient sources are generally available, local variations in aquifer yield or stream flow may present challenges to obtaining an adequate supply, particularly in areas of concentrated demand. For example, towns in Maryland's Piedmont region may be forced to look outside of their present boundaries in order to meet the water demands of a growing population. Also, competition for water among various types of users in parts of Southern Maryland and the Eastern Shore have forced large users, including some community systems, to explore and develop sources from deeper aquifers.



Representation of a Confined Aquifer Well
Figure 3.2

The need to provide water for an ever-growing population creates an ongoing need to continuously reevaluate the adequacy of Maryland's water resources as a supply of drinking water.

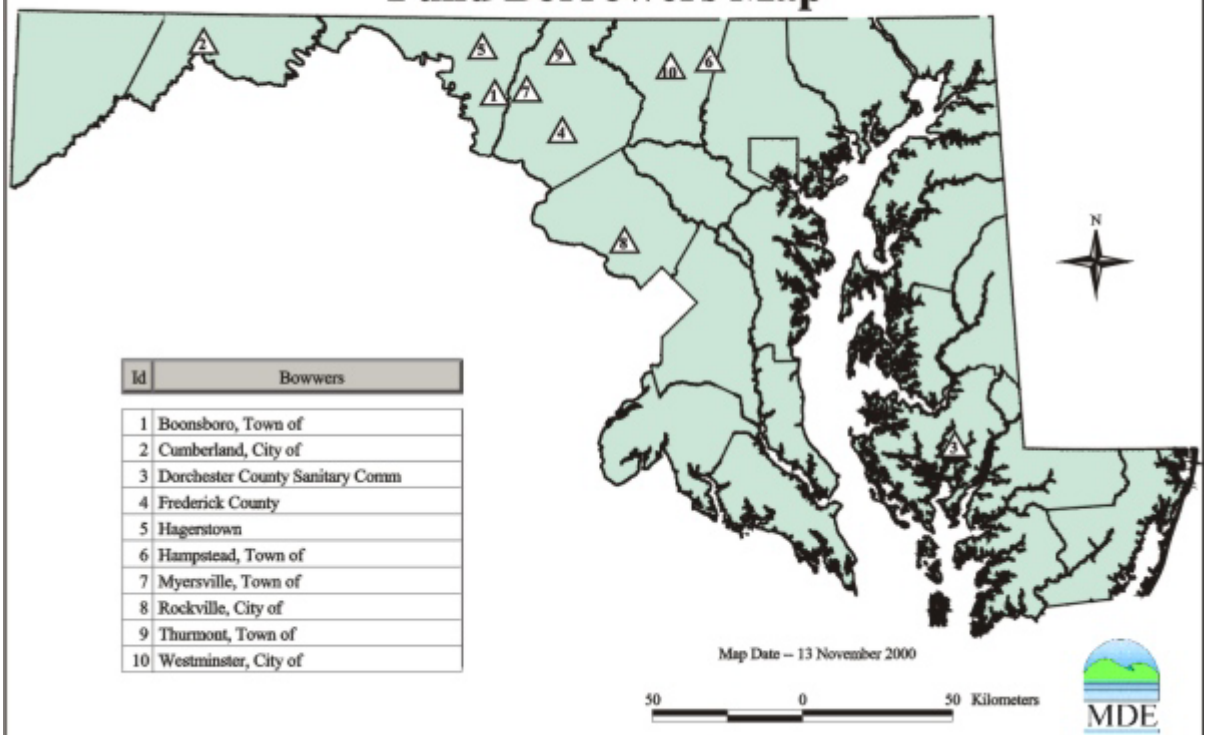
What Actions Is Maryland Taking To Ensure A Safe and Adequate Supply of Drinking Water?

Progress in assuring the safety of drinking water for Maryland's residents has meant focusing the State's oversight resources toward the areas of greatest health risk. For public water supplies, this means protecting the sources of water supplies, optimizing treatment plant performance, and ensuring that public water systems routinely monitor water quality. Source protection activities have targeted the most vulnerable groundwater systems and the metropolitan reservoir systems serving the most number of people. Interjurisdictional agreements protecting the metropolitan reservoirs are being strengthened through the study of reservoir eutrophication (processes that cause a water body to become so rich in nutrients that dissolved oxygen levels decrease and natural wildlife is unable to survive) and the development of total maximum daily loads. (For more information on Total Maximum Daily Loads -- see Goal 6)

Public Water Systems

MDE adopts and enforces federal regulations that are promulgated under the Safe Drinking Water Act. The Safe Drinking Water Act was originally enacted in 1974 and was amended in 1996. These amendments resulted in the development of many new drinking water initiatives such as the Drinking Water State Revolving Loan Fund, Source Water Assessment Program, and Capacity Development. In addition, new or revised drinking water standards for several contaminants have been established. The Drinking Water State Revolving Loan Fund (DWSRF) is a low interest loan program that may be used to finance the planning, design and construction of capital projects to upgrade water treatment and distribution systems. The DWSRF places emphasis on correcting systems not in compliance with the Safe Drinking Water Act and on helping small, economically disadvantaged communities. Since its inception in 1996, the DWSRF has financed over $24 million in capital projects with 10 local governments in Maryland. (Figure 3.3) For more information, please contact the Capital Planning Program at 410 631- 6683.

Maryland Drinking Water State Revolving Loan Fund Borrowers Map



Id	Bowwers
1	Boonsboro, Town of
2	Cumberland, City of
3	Dorchester County Sanitary Comm
4	Frederick County
5	Hagerstown
6	Hampstead, Town of
7	Myersville, Town of
8	Rockville, City of
9	Thurmont, Town of
10	Westminster, City of

In FY2000, the Environmental Protection Agency (EPA) approved Maryland's Source Water Assessment Program and the Capacity Development Program for new public water systems. The Source Water Assessment Program was established to evaluate and publish the risk of contamination of public water sources so that these risks can be reduced**.** The Capacity Development Program establishes mechanisms so that a new water supply system demonstrates that it will have necessary technical, financial, and managerial qualifications before MDE approves the construction.

In addition, the Water Supply Program undertakes many ongoing activities to ensure the quality of the water from public water systems. These activities include conducting Comprehensive Performance Evaluations of surface water systems, tracking and enforcing water quality standards, overseeing the county health departments as the departments conduct delegated responsibilities for transient non-community water systems (parks, churches, gas stations, and restaurants), surveying the potential impacts of proposed federal regulations, responding to water supply emergencies, and providing technical assistance to public water systems.
New initiatives still under development include the establishment of a Capacity Development Program for existing water systems which will help target training and financial assistance, and the adoption of federal regulatory changes for Consumer Confidence Reports, Operator Certification, Interim Enhanced Surface Water Treatment Rule, and Disinfection By-products.

Private Wells

MDE delegates authority to county health departments to oversee the approval of construction permits for new wells. In addition, MDE coordinates surveys with counties to address water quality concerns related to revised drinking water standards or investigations of contamination that may impact homes with private wells.

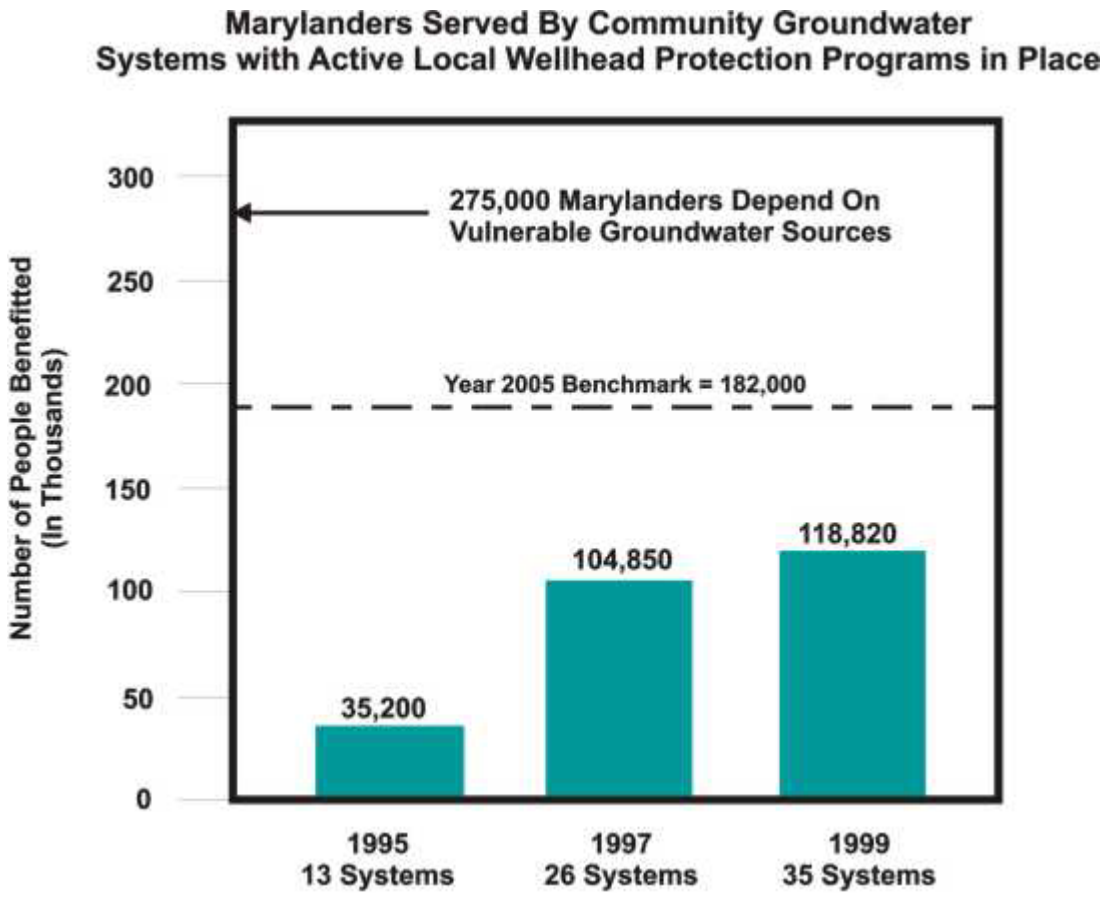


Figure 3.4

Wellhead Protection Programs

Wellhead protection programs are voluntary mechanisms that local governments use to reduce the risk of contamination and protect the recharge area of their water supply. (Fig. 3.4) About 80 communities are working with the State to implement wellhead protection programs, which include education and public outreach meetings, new construction planning and review, and investigation of potential contamination sources. New funding under the Drinking Water State Revolving Loan Fund has enabled MDE to facilitate development of local programs. MDE is currently supporting four wellhead protection projects totaling $184,150 across the State.

The communities benefiting from these projects, which are funded from the Drinking Water State Revolving Loan Fund, include:

(1) Eight community systems in Cecil County,

(2) The Town of Walkersville,

(3) The City of Salisbury, and

(4) The Town of Woodsboro.

In 1999, 118,820 Marylanders were served by community ground water systems with wellhead protection programs in place. This represents 43% of the total population that depends on vulnerable ground water sources. The benchmark for 2005 is 182,000. Additional projects in the development stage for Anne Arundel County, Washington County, St. Mary's County, and the Town of Sharptown will allow Maryland to meet that benchmark for 2005.

Watershed Protection Programs

Watershed protection programs are voluntary mechanisms that public water systems use to reduce the risk of contamination and to protect the recharge area of their water supply. (Fig. 3.5)

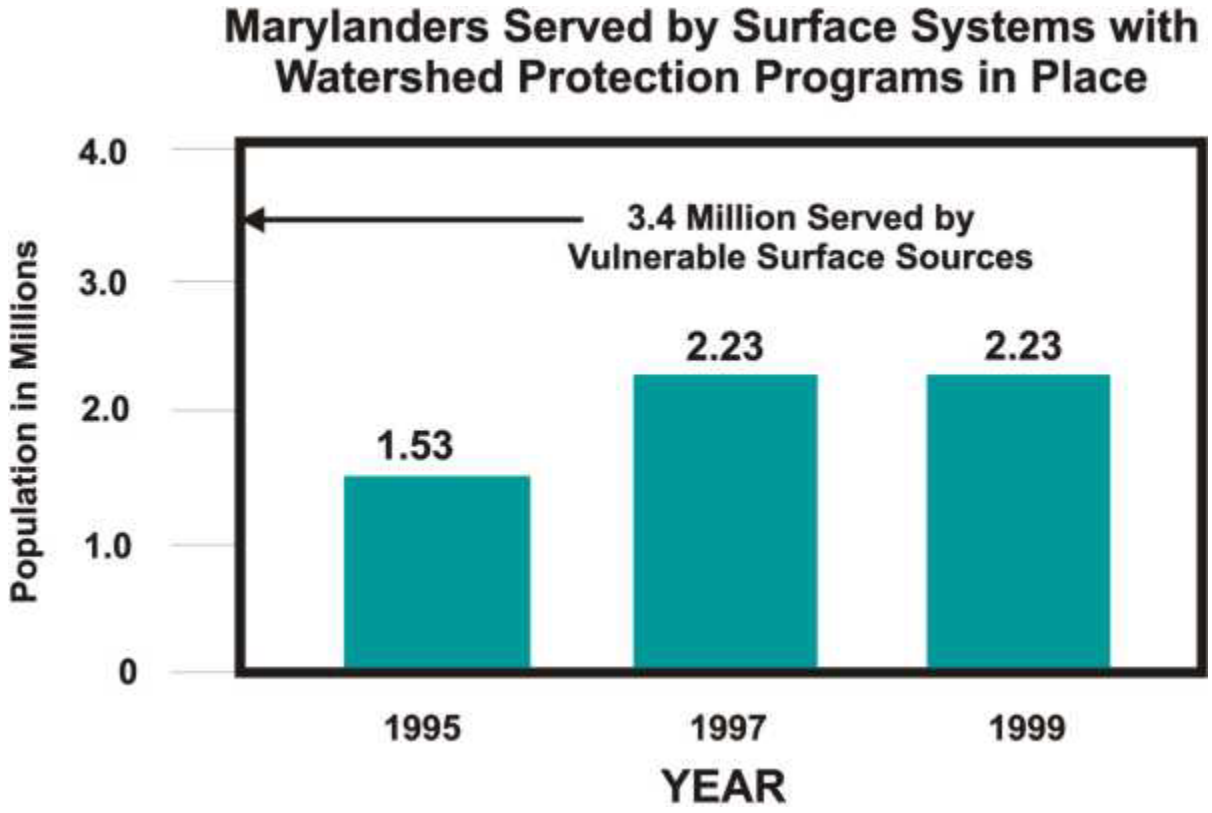


Figure 3.5

Formal watershed protection programs are in place for three large public drinking water systems that receive water from vulnerable sources: Baltimore City and Cumberland, and the Washington Suburban Sanitary Commission's Patuxent Supply. Significant local participation has been key to program successes. Coordination with other agencies and states has begun for many water system watersheds.

Permitting and Inspection

All water systems are inspected regularly, but surface water systems receive more frequent State inspections and also undergo Comprehensive Performance Evaluations to determine whether the treatment facility is optimized for the removal of particles and parasitic organisms such as *Giardia lamblia* and *Cryptosporidium parvum*. Plant operation, maintenance and administration are evaluated to identify areas of potential improvement. Turbidity standards are now 70% lower than what was acceptable 10 years ago. Monitoring at Maryland's public water systems is based on the source of water, the type of system, and the number of people served by the system. Results are entered into a database for easy review, retrieval and analysis. Tighter standards and increasing requirements have resulted in a greater amount of resources being expended by State and local governments to ensure the safety and adequacy of Maryland's water supply.

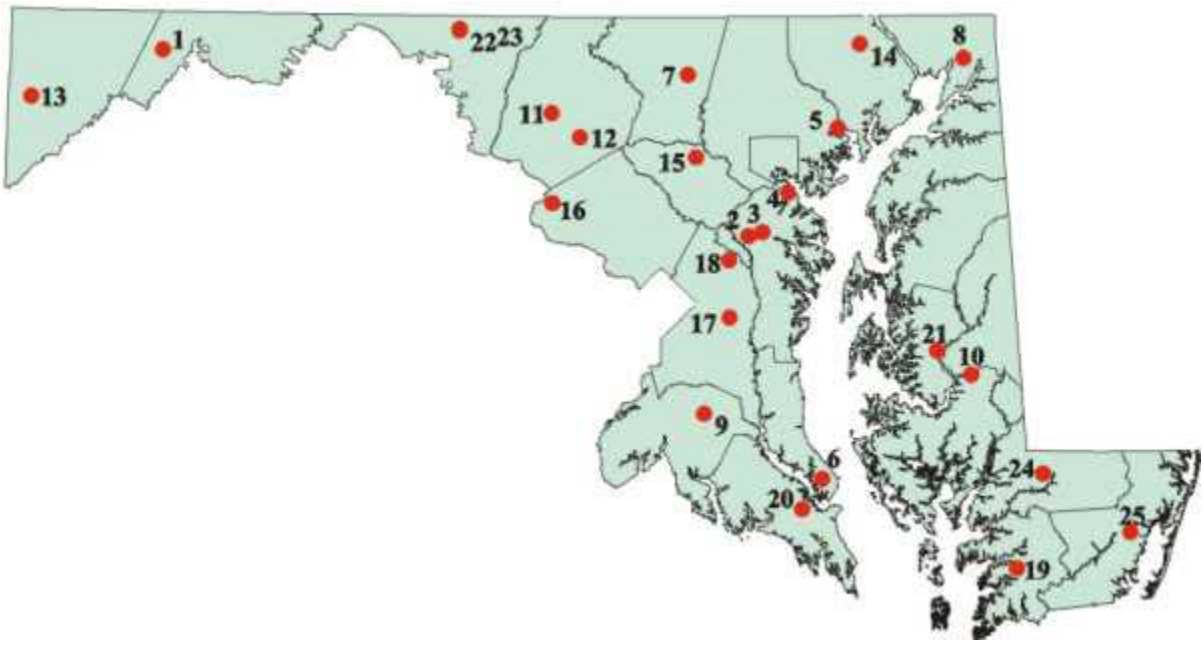
Municipal Landfills

MDE strives to protect public health and the environment from the adverse impacts that municipal landfills can have on drinking water supplies by ensuring that permitted solid waste facilities are designed and operated in compliance with water pollution control requirements through permitting, inspection, and monitoring of these facilities. However, local governments are responsible for siting these facilities through their land use planning and zoning activities.

MDE's solid waste management strategies have demonstrated major improvements over the past 20 years. For example, there are fewer active municipal landfills, but more active rubble landfills and other types of facilities, than there were 10 or 20 years ago. (Fig. 3.6) However, the older, inactive facilities still exist, and require monitoring and inspection. As communities expand to include areas that were previously largely undeveloped, homes and businesses are being sited much nearer to these older landfills. Program responsibility for monitoring and ensuring proper groundwater remediation at these facilities will continue for many years.
All operating municipal solid waste landfills are now equipped with liners and leachate collection systems to prevent landfill contaminants from migrating to surface and groundwaters. Last year, all but one of the operating municipal waste landfills in the State were in compliance with groundwater standards.

MDE has also implemented regulations that require liners and leachate collection systems in all operating rubble landfills by July 2001, or the landfills must close. The regulated community is reaching the goal of shifting to the use of lined rubble landfills and it is anticipated that this deadline will be met. The operators of several rubble landfills have decided to close rather than comply with the liner and leachate collection system requirements. Because landfills have the potential to cause serious contamination of groundwater, and because landfills are often located in less developed areas where neighboring facilities and citizens are likely to be using local groundwater supplies that could be impacted if these protective systems fail, MDE places great priority on the proper design and construction of these facilities. Engineers and geologists review the plans for new landfills and oversee the construction of the systems that help protect groundwater. In addition, the permittees are required to have qualified laboratories conduct monitoring of the groundwater around their landfills. This data is reviewed by MDE geologists to insure that if a release occurs, it is detected and the appropriate remedial actions are undertaken by the permittee to clean up the affected groundwater.

Municipal Landfills in Maryland (December 2000)



Active Municipal Landfills

1. Mountain View	14. Harford Waste Disposal Cntr
2. Fort Meade	15. Alphas Ridge
3. Millersville	16. Montgomery Co. Site #2
4. Quarantine	17. Brown Station Road
5. Eastern	18. Sandy Hill
6. Appeal	19. Fairmount Road
7. Northern	20. St. Andrews
8. Cecil County	21. Midshore Regional
9. Charles County	22. Forty West
10. Beulah	23. Resh Road II
11. Fort Dietrick	24. Newland Park
12. Reich's Ford Site B	25. Central Municipal
13. Garrett County	

Appropriation Permits

Maryland has a program for evaluating water use and the adequacy of water resources to meet the demand of specific users. Any person who wishes to appropriate water for agricultural, municipal, commercial, industrial, or other non-domestic uses must obtain a Water Appropriation Permit from MDE. There are currently more

than 13,000 active Water Appropriation and Use Permits, and 1,128 permits (including new, renewed and revised permits) were issued during FY2000. Review of the permit application involves evaluating the potential needs of the user and the probable impact of the withdrawal on neighboring users. The goal of the permit program is to maximize beneficial uses of the waters of the State, while minimizing conflicts between water users. A secondary aim is to ensure that water resources are not overused and that the environmental impacts of each water use are acceptable.

The evaluation of a proposed ground water use may involve conducting pump tests to ascertain the yield capabilities of an aquifer, as well as modeling hydrogeologic conditions to identify possible impacts to the aquifer and other users. Ground water withdrawals are evaluated on sustained yield criteria: that is, whether a proposed use, either by itself or in combination with other uses, will exceed the aquifer's ability to provide sufficient water without depletion.

Surface water withdrawals may be made from a stream or reservoir, and are highly dependent on precipitation patterns. Stream flow can vary greatly, which may necessitate the measurement of stream flows for a period long enough to characterize water availability, particularly during low flow events. Because minimum flows must be maintained in any stream for aquatic life and downstream users, withdrawals may be restricted during periods of low flow. The use of wells or a reservoir in conjunction with a stream withdrawal is often necessary in order to ensure an adequate drinking water supply during low flow events. Reservoirs are also evaluated for their ability to meet expected water demands during extended periods of low or no inflow, such as drought. The assessment of available water resources during the permit review process allows for the identification of potential problems, and provides water suppliers an opportunity to plan for a water supply system that can reliably meet their consumers' needs.

What Challenges Is Maryland Facing?

Smart Growth

Population growth and new development impacts water supply resources in several ways. New growth requires developing new water supply sources and expanding the production capacity of existing sources. Development is occurring in areas upstream of major water supply sources in the Potomac and other river basins. This additional growth results in more urban runoff, greater potential for stream erosion, and increased wastewater discharges upstream of water intakes. New studies are being undertaken to help assess the impact of this growth on water quantity and quality. Other growth is occurring in regions where water levels in deep, protected aquifers are already declining. This has spurred the exploration of untapped aquifers deeper in the Coastal Plain formations. New development of on-site wastewater systems also increases the possibility for ground water contamination. In those regions of the State where unconfined aquifers are used for water supply, these discharges increase the potential for elevated nitrate levels and may be sources of microbiological contamination. Commercial development in areas served by ground water also increases contamination potential through the storage and use of petroleum and other hazardous materials.
These challenges are why MDE ensures that smart growth policies are followed when providing grants and loans to local governments in priority funding areas.

New Drinking Water Standards

New drinking water standards will present additional challenges to public and private supplies in the upcoming years. The current arsenic standard of 50 parts per billion is scheduled to be lowered by June 2001. The U.S. EPA has proposed a standard of 5 parts per billion. This standard would affect more than 120 water treatment plants and thousands of private wells over a multi-county region. Challenges in implementing this standard will include ensuring adequate testing; selecting and installing appropriate treatment equipment; testing of alternative sources for arsenic levels; properly disposing of arsenic contaminated wastewater from the treatment units; and minimizing the financial impact on systems and residents in the affected areas.

The U.S. EPA is currently evaluating radon for future regulation. Radon is found in higher levels in the central and western counties of Maryland with the highest values in the Piedmont region. Currently there is no radon standard. The extent of the impact will depend on the maximum contaminant level adopted. Additional testing of private and public supplies and installation of treatment units will follow the promulgation of the final standard.

Water Conservation and Drought

In the summer of 1999, Maryland endured the most severe drought in more than 30 years and one of the driest years in Maryland's history. Drought conditions began in the fall of 1998, and worsened during the spring and summer of 1999. All across Maryland, low rainfall resulted in dangerously dry conditions: flow in the Susquehanna River was down by two-thirds, flow in the Potomac River was down by 50 percent, and the three reservoirs that serve the Baltimore region - Liberty, Prettyboy, and Loch Raven - were down more than 24 feet, 18 feet, and 5 feet, respectively. (Fig. 3.7)

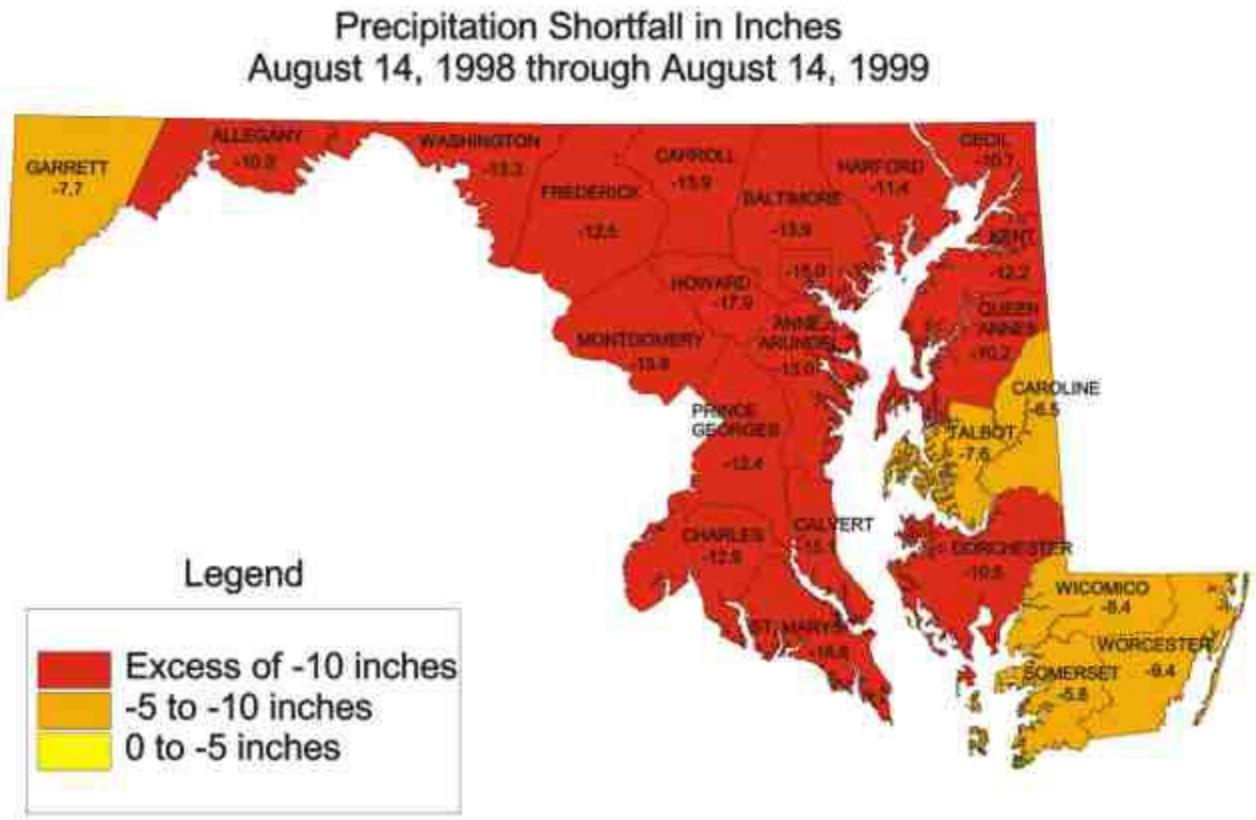


Figure 3.7

In late July of 1999, Governor Parris Glendening requested voluntary water use restrictions from Maryland's citizens and in early August issued an Executive Order declaring a Statewide drought emergency and requiring mandatory water use restrictions. These restrictions included: no lawn watering, no homeowner carwashing, no filling or topping off of private pools, no washing of paved surfaces, reduced operation of commercial carwashes, and reduced watering of golf courses. The Governor also made a plea to Maryland businesses to voluntarily reduce water consumption by 10%.

Governor Glendening holds press conference August 1999, to announce mandatory Statewide Water Usage Restrictions

In response to the emergency situation, MDE established a drought hotline and answered several thousand questions from citizens and businesses about the mandatory conservation restrictions. To ensure that the conservation restrictions did not cause excessive hardship on individuals or businesses, procedures were established for individual hardship variances.

Prettyboy Reservoir - August 1999

Prettyboy Reservoir - April 2000

Marylanders responded to the call for conservation by decreasing their water use from an average of 800 million gallons per day in July to about 525 million gallons per day in August and September at the twenty largest water systems. Conservation restrictions were lifted in September as a result of significantly reduced water demand, and heavy rains from Hurricanes Dennis and Floyd.

To minimize the future impact of droughts, Governor Glendening established two advisory committees. The Statewide Water Conservation Advisory Committee reviewed and approved indicators and procedures for declaring and responding to drought emergencies, and issued a number of recommendations on the importance of water conservation. These water conservation recommendations included State government offices taking a leadership role by implementing water conservation efforts at State facilities and developing a public awareness campaign aimed at educating the public about the importance of using water efficiently and reducing water use on an ongoing basis regardless of drought status.

The Technical Advisory Committee on Water Supply Infrastructure studied the impact of infrastructure deficiencies on water conservation, and recommended standard criteria for determining which systems need to implement improvements to minimize water loss. Final reports from both committees were presented to the Governor’s office in November 2000.

MTBE

In recent years, methyl tertiary-butyl ether (MTBE), a gasoline additive used as an octane enhancer since the 1970's when lead was being phased out of gasoline, has been found in some public drinking water supplies throughout the United States, including Maryland. With the assage of the 1990 Clean Air Act, there was an increased use of MTBE to reduce carbon monoxide emissions from motor vehicles. Then, beginning in 1995, gasoline reformulated to reduce air toxics emissions and pollutants that form ground-level ozone was required in areas with the worst ground-level ozone air pollution (including the Baltimore and Washington metro areas). MTBE has been the additive most commonly used by gasoline suppliers throughout most of the country because it is very cost-effective in meeting air quality and gasoline performance goals. In Maryland, the use of cleaner gasoline is an important part of our comprehensive strategy to clean the air.

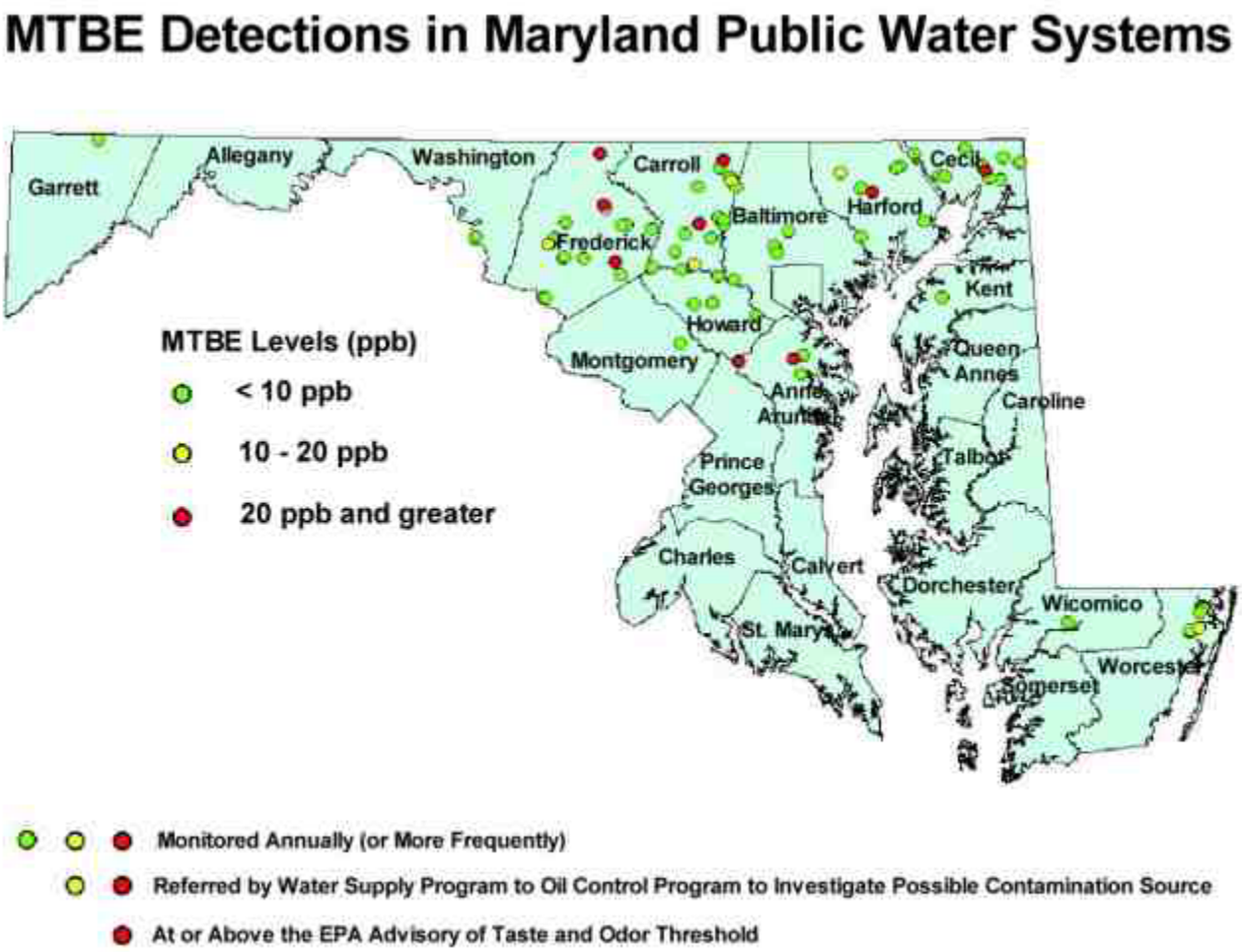


Figure 3.8

MTBE enters the environment primarily from leaking underground and above ground petroleum storage tanks, but also from a variety of sources including atmospheric deposition, stormwater runoff, watercraft, and residential usage of fuels. Since 1995, MDE has been sampling public water systems for MTBE. Of the 1,060 public water systems tested, MTBE was detected in 66 systems, with 10 systems having levels above 20 parts per billion (ppb). An EPA health advisory recommends that levels of contamination at or below 20 to 40 (ppb) provide a wide margin of safety to the public from toxic effects of MBTE and would likely not create water with unpleasant taste and odor. Of these 10 systems, 8 now have alternate sources. In addition, MDE is

sampling for MTBE contamination at all leaking underground storage tank sites with groundwater impacts. Data from leaking underground storage tank remediation activities indicated that 228 domestic wells have been impacted by MTBE to date. These systems have had carbon filtration installed to remove the contamination. In July 1999, a Blue Ribbon Panel of leading experts formed by the EPA to investigate concerns raised regarding the health risks from exposure to MTBE in drinking water, recommended that EPA work with Congress and the states to implement reforms to ensure that water supplies are better protected while maintaining air pollution reductions resulting from the use of MTBE. MDE is currently working to further define the extent of MTBE contamination in the groundwater of the State. For water supplies used for providing public drinking water, contamination levels over 10 ppb result in an MDE investigation of the contamination source. Sampling frequency increases when MTBE is detected. For private wells, treatment is recommended at a level of 20 ppb at the point of use. However, at higher levels, well replacement may be needed. Follow-up action has included providing alternative sources of water, adding treatment, conducting additional monitoring, and changing remediation strategies. On the preventative side, MDE assists local governments in developing wellhead protection programs to minimize the risks of contamination at public supplies. Now that the potential for MTBE's presence in groundwater has become more widely known, local government water sampling programs have recently started including MTBE. MDE is also gathering additional information available from major oil companies and other sources, and is currently assessing the potential health risks from MTBE.

In addition, Governor Glendening signed Emergency House Bill 823 in May, 2000, which created an MTBE Task Force consisting of 16 members from various government agencies, the petroleum industry, health related professionals, and the ethanol industry. The Task Force is charged with: determining and assessing the environmental and health risks associated with ground and surface water contamination from MTBE; examining national and regional efforts regarding MTBE contamination; recommending a plan to minimize and counteract the environmental and health risks associated with ground and surface water contamination from MTBE; and exploring alternatives to MTBE, including ethanol and oxygenated fuel, that can be used for the purpose of reformulating gasoline to reduce air toxic emissions and pollutants that form ground level ozone. The Task Force presented its preliminary report to the Governor in December 2000. The Task Force will provide a final report by December 1, 2001. For additional information on the findings of the Task Force, please go to MDE's Homepage at www.mde.state.md.us

TIPS to Ensure Safe and Adequate Drinking Water

- Practice and spread the message of water conservation. Use water wisely.
- Minimize lawn and garden watering. Water trees, lawns and shrubs slowly to prevent runoff.
- Replace leaky toilet valves (a "running toilet" between flushes). You may be losing more than 250 gallons a day.
- Install ultra-low plumbing devices and fixtures. Replace worn out washers on leaky faucets.
- Learn about where your water comes from and work with your local and state government to ensure its protection.
- Read and review your annual Consumer Confidence Report, which describes the results of tests performed at your drinking water system.
- If using a private well, obtain advice from your local health department for recommended testing. Protect your well's integrity.
- Use care to prevent spillage when handling gasoline and oil and promptly report and clean up any spills.

- Properly maintain your home heating oil tank to prevent leakage and spillage.
- Do not dispose of used motor oil, antifreeze, solvents, hazardous chemicals, or waste in storm or home drains. Take used motor oil and antifreeze to designated recycling centers.
- Use pesticides, herbicides and fertilizers carefully and sparingly and only when other methods have failed. Do not apply if rain is in the forecast. Remember, anything entering a storm drain goes directly into streams, or groundwater, untreated.
- Report any suspicious potential pollutant discharge or illegal dumping activity. Call toll-free 1-800-633-6101

Goal 4

Reducing the Threat to Public Health from the Presence of Hazardous Waste and Hazardous Materials in the Environment

Protecting public health from the adverse effects of exposure to hazardous substances and noise pollution in the environment is a very important goal for MDE. Prompt response to releases greatly reduces the consequences and further protects human health. Cleanup or proper control of contaminated sites has numerous positive impacts, including: reducing exposure to chemical, biological, or physical agents; preventing illness and disease; improving the quality of our natural resources; supporting smart growth by revitalizing formerly used properties; removing blighted properties from community landscapes; increasing the tax base; and supporting economic development efforts.

Is There A Threat to Our Public Health from Hazardous Waste and Hazardous Materials in the Environment?

Lead

Childhood lead exposure is the nation's leading environmental health hazard for children, its effects ranging from learning and behavior problems to lasting neurological damage. Lead poisoning is a critical environmental health challenge in Maryland and the most preventable childhood disease.

Figure 4.1 - Represents the percentage of children in Maryland whose blood was screened for lead in their blood at or above the poisoning level (greater than 20 mg/dl).

Ninety-five percent of housing units in Maryland built before 1950 contain lead paint. People can get lead in their bodies by breathing or swallowing lead dust, or by eating soil or paint chips with lead in them. Despite the fact that lead contamination is preventable, approximately 1,000 children are found to be lead poisoned each year in Maryland and more than 5,000 children have elevated blood lead levels each year. Despite these alarmingly high numbers, trends since 1992 show that statewide average blood lead levels are decreasing and that both numbers and percentages of children with elevated blood lead levels are decreasing.

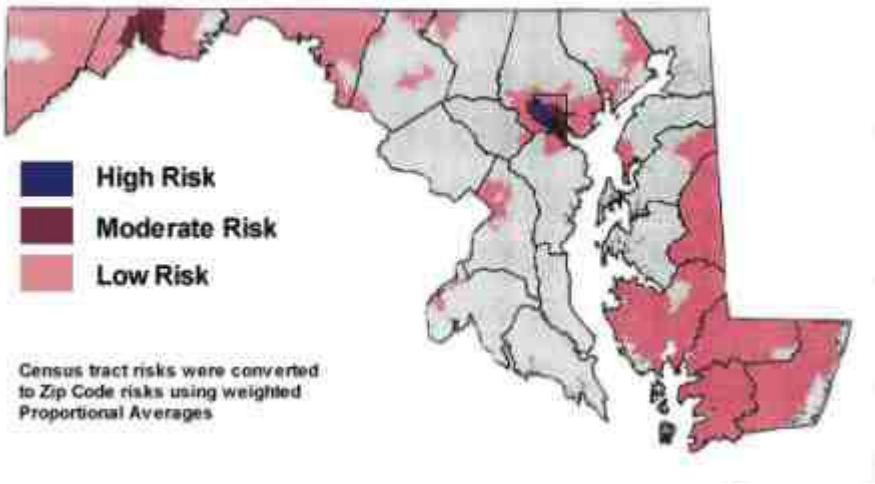


Figure 4.2

Hazardous Waste, Toxic Materials and Toxic Releases

Maryland's rich industrial history has resulted in a significant number of properties where investigation and/or cleanup of contamination is necessary to ensure that the public health and the environment are protected. Currently, MDE is actively overseeing investigations and remediation at 105 sites located on 17 federal facilities, 9 National Priority List (NPL) sites, and 34 State Superfund sites. In addition, the Department is in the process of conducting investigations of hundreds of sites the EPA has designated as "No Further Remedial Action Planned" where there may still be some risk to the public or the environment. Cleanup of these properties has positive impacts on human health and the environment and benefits our communities aesthetically and economically.

The Toxics Release Inventory (TRI) is part of the federal Emergency Planning and Community Right to Know Act. TRI is comprised of information gathered annually from facilities covered by the law regarding activities with specific chemicals, including: the quantity released into the environment, reused, and treated at the facility; the quantity sent off-site for release, reuse, or treatment; the method used to treat the material; and the total amount of a listed substance managed by each facility. In the interest of providing the most accurate and complete accounting of toxic releases, the TRI program tends to be dynamic. Each evolution is intended to enhance the quality of the data collected. These changes sometimes make it difficult to make graphic comparisons of data trends. However, there is a group of core chemicals and industries which have always been part of the TRI reporting process. Figure 4.3 reflects those core chemicals and industries by media (Air, Water, and Waste) for Maryland from 1988 to 1998.

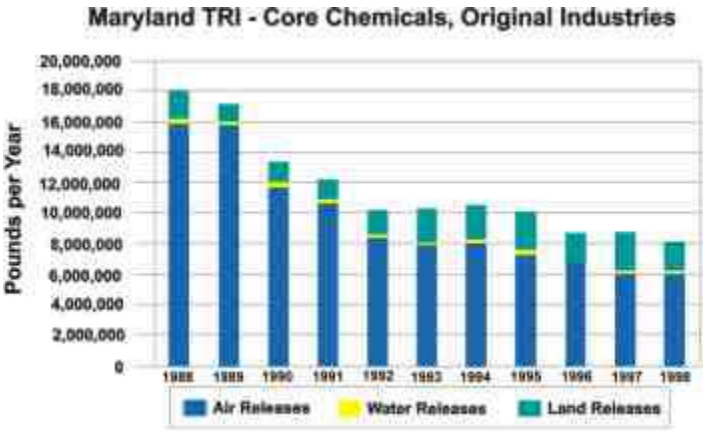


Figure 4.3

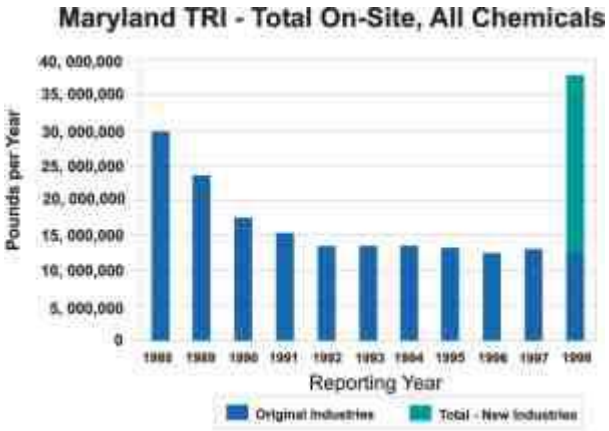


Figure 4.4

In Figure 4.4, it appears that the total TRI for Maryland experienced a substantial increase from 1997 to 1998. This increase can be attributed to a change in reporting requirements to include releases from 7 additional non-manufacturing sectors. In Maryland, the increase is almost completely attributable to inclusion of coal and oil burning electric power generators.

What Actions is Maryland Taking To Reduce the Threat to Public Health From Hazardous Waste and Hazardous Materials?

Lead

Maryland has developed a strong, diverse infrastructure to respond to this complex issue. These lead poisoning prevention efforts received a boost in January, 2000, when Governor Parris Glendening, Baltimore Mayor Martin O'Malley, and EPA Administrator Carol Browner announced a plan to aggressively expand Maryland's efforts to protect children from the tragedy of lead poisoning. To significantly reduce the likelihood of lead exposure for children in low-income neighborhoods, particularly in Baltimore City, the Governor announced a plan to aggressively enforce existing laws and improve conditions in homes to make them safe and lead-free.

Governor Parris N. Glendening, Baltimore Mayor Martin O'Malley and EPA Administrator Carol Browner

MDE's lead poisoning prevention activities focus on prevention, early intervention, and enforcement. Prevention is emphasized throughout the lead poisoning prevention law. The statute's "Standard of Care" provision for rental units built before 1950 includes special maintenance before rental unit turnover, verification inspections, registration, and distribution of educational materials to tenants. MDE conducts extensive outreach to rental property owners, managers, realty associations, and tenants to explain their rights and responsibilities under the law. At the end of FY 2000, 74,373 rental properties built before 1950 have registered with the MDE Lead Rental Property Registry. Over 40,000 inspections of rental properties have been performed by MDE-certified third party inspectors since implementing regulations were completed in 1996.

"Maryland has been on the forefront of recognizing lead paint hazards and has created a standard of care in rental housing. MDE and the Lead Paint Commission have taken a leadership role in coordinating the efforts of many stakeholders to produce dramatic public awareness, risk reduction in thousands of properties, and most importantly I believe, safer housing for children. While much has been accomplished, much still remains o be done."

Terry Sell, member of Maryland's Lead Paint Commission

Early intervention is supported by the Childhood Lead Registry (CLR), which receives all blood lead tests on Maryland children. Case management is performed by local health departments, following MDE protocols. All children with elevated blood lead levels of 15 micrograms per deciliter or more are referred to the local health departments by MDE CLR staff. Environmental investigations are performed or overseen by MDE staff. Abatement orders are issued by local health departments or housing authorities. MDE or tenants may issue a "Notice of Defect" to the property owner, to which the owner must respond within 30 days. Blood lead surveillance data are analyzed annually. Special ongoing studies, such as comparing CLR data to Medicaid data to assess Medicaid testing, allow for more detailed analysis. MDE also provides outreach to local health and environmental departments, health care providers, and parents regarding lead poisoning case management.

Enforcement for lead poisoning prevention is essential to achieving our goal. Under Governor Glendening's Lead Initiative, inspections are expected to increase. In FY 2000, 10,843 inspections were conducted with respect to lead paint in housing, and 99% of those properties inspected were in significant compliance. Moreover, 151 penalty and other enforcement actions were taken and 104 compliance assistance actions were rendered.

Hazardous Waste & Toxic Materials

Consistent with federal guidelines under the Resource Conservation and Recovery Act (RCRA), MDE regulates the management of hazardous waste in Maryland, including generation, transport, storage, and disposal. The State's regulations are designed to prevent and eliminate the release of hazardous waste to the environment and achieve a continual decrease in the aggregate amount of hazardous waste generated per year. The Department encourages waste minimization and pollution prevention through outreach to the regulated community and conducts industry visits to promote implementation of pollution prevention technologies.

In recent years, there has been a trend toward decreasing numbers of permitted hazardous waste treatment, storage, and disposal facilities (TSDs) in Maryland. In July 1998, there were 28 permitted TSDs in the State and at the end of FY 2000, the number of permitted TSDs was 23. The increase in closure of these sites is believed to be a direct result of better hazardous waste management, waste minimization, and pollution prevention activities at facilities, a voluntary effort by industry to reduce hazardous waste generation and the need for long-term storage of hazardous wastes. Although the number of TSDs is decreasing, there are thousands of small quantity generators and many sites where hazardous waste contamination is being investigated or remediated that still require MDE oversight to ensure protection of public health and the environment. In FY 2000, MDE conducted 647 inspections of hazardous waste TSDs, generators, and haulers, with 90% of those facilities inspected in significant compliance. In addition, 47 penalty and other enforcement actions were taken and 66 compliance assistance actions were rendered.

Hazardous Waste Project Highlights in FY 2000 include:

+ The U.S. Army Fort Meade completed an extensive restoration project (Supplemental Environmental Project) that will benefit wildlife habitat and aid in pollution reductions under a settlement with MDE for hazardous waste management violations. Repairs and improvements to Burba Lake included establishment of riparian vegetation buffers, stream bank stabilization, the removal of a concrete aqueduct, and other components to control run-off.
+ Under an interagency agreement with Towson University Center for Geographic Information Systems (GIS), MDE is working to create a casual user interface for use by inspectors to target and prioritize hazardous waste generators in Maryland.
+ Construction activities are well underway at the Beazer East Inc. site located near Salisbury, where wood treating operations ceased in 1984. In 1991, Beazer and MDE signed an Administrative Consent Order that required additional studies and development of a remedial action. Planned site activities, which began in June 2000 and will continue through June 2001, include construction of a subsurface barrier wall, installation of a hydraulic gate and in-situ biological treatment system, rerouting of Keens Creek, and several wetlands mitigation projects.

Consistent with federal guidelines under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and State Superfund Law, MDE initiates and oversees the assessment and cleanup of hazardous waste sites where releases have occurred. MDE participates as a partner in decision-making with EPA, Department of Defense, and responsible parties at all phases of environmental investigations and in overseeing hazardous waste cleanups at National Priority List (NPL) sites and federal facilities. For example, the Department continued to oversee the removal and treatment of contaminated soils at the former Southern

Maryland Wood Treating site, an NPL site in St. Mary's County. Approximately 260,000 tons of soil have been treated at the site since the remediation action began. MDE is responsible for long-term monitoring at the site once the remediation is completed. MDE also provides sole oversight for cleanups at State Superfund sites. The success of the Department's activities is directly related to its ability to communicate with its stakeholders. For example, at 10 federal facilities, restoration advisory boards have been formed to monitor, review, and evaluate federal facilities undergoing environmental restoration activities. At other federal facilities, MDE has entered formal partnering agreements with EPA and the facilities. The Department is required to investigate all sites on the State's Master List, a list of sites known to be, or that may potentially be, contaminated by hazardous waste (also known as State Superfund sites). EPA designated 336 of these sites as "No Further Remedial Action Planned." This federal designation does not mean that there is no risk to public health or the environment posed by the site; rather, it means the federal government will not provide funding for the site. These sites are, in essence, turned over to the State program to address.
State Superfund Highlights in FY 2000 include:

+ 53 site surveys, 3 brownfields assessments, 3 expanded site investigations, 1 combined preliminary assessment/site investigation, and 9 Formerly Used Defense Site (FUDS) surveys of State of Master List sites were conducted.
+ Environmental activities at the Tipton Airfield (formerly a part of the U.S. Army Ft. Meade) in Anne Arundel County were completed and the site was de-listed from EPA's NPL in 15 months. The 366 acre tract has now been transferred to the County for use as a private airfield.
+ The environmental cleanup at Bainbridge Naval Training Center, a 1,200-acre site in Cecil County, was completed and the property has been transferred to the Bainbridge Development Corporation for development.

Emergency Response

The Department's Emergency Response Division works in cooperation with local hazardous materials units to respond to emergencies to minimize risks to human health and the environment. These emergencies result from accidents and/or deliberate actions causing the release of hazardous substances to the air, water or land from fixed facilities, rail, waterway, and truck transportation routes. In addition to response support, the Department provides training opportunities for local emergency responders in association with the South Baltimore Industrial Mutual Aid Plan and works closely with industry in sharing resources and expertise during chemical spill events.

The Department coordinates planning and training activities with other state, local and private industry emergency response organizations and hazardous materials units to ensure that Maryland has the capacity to respond to emergencies in order to minimize risks to human health and the environment.

Photo on right: MDE Emergency Response Truck

Counting the numbers of emergency response actions is the best means of evaluating success in our emergency response program. (Figure 4.5) However, the random nature of these events, and the linkage of events to natural factors such as weather, reduces the ability to accurately identify the reasons for any reported trends. Chemical spill responses have remained relatively constant, with downward trends over the past two years that appear to be associated with milder winters and less highway transportation of heating oil. Local government spill reports continue on a voluntary basis and detract from the use of the information in definitive trend analyses.

Statewide FY 1999 Statistics:

Hazardous Materials Reports 236
Petroleum Release Reports 2,962
Medical Waste Reports 10
Other (Water & Air Pollution complaints) ... 247
Total: 3,455

MDE Emergency Responses:

Oil 498
Hazardous 245
Medical 6
Other 75
Total: 824

Statewide FY 2000 Statistics:

Hazardous Materials Reports 245
Petroleum Release Reports 2,977
Medical Waste Reports 12
Other (Water & Air Pollution complaints 247
Total: 3,495

MDE Emergency Responses:

Oil 450
Hazardous 122
Medical 9
Other 82
Total: 663

Figure 4.5

The Emergency Response Division has taken an active role in public notification during emergency situations. While the Department recognizes that the local and State emergency management agencies retain primary responsibility and authority for public notification, MDE works actively with the primary local and State agencies to assist them in the prompt and accurate flow of information. The Wagner's Point (a small residential community in Baltimore with numerous industrial facilities) incidents highlight this effort. The Department worked side by side with Baltimore City in resolving community concerns regarding prompt notification of environmental emergencies. In addition, MDE formed a workgroup that included representation from across the Department to better understand the breadth of the environmental activities in the Wagner's Point community. This workgroup enabled the Department to respond quickly and in an organized way to citizen, media, and elected representatives' requests about regulated facilities in Wagner's Point. During three significant environmental accidents in the community, MDE's Emergency Response Team responded by taking samples and providing the community with information during and after the incidents.

MDE trains and plans for a variety of environmental emergencies. Although the nature and place of these emergencies cannot be predicted, proper training and planning is the key to the safe and timely mitigation of an emergency.

For example, on April 7, 2000 what could easily be called Maryland's worst oil spill occurred in Southern Maryland at the Chalk Point Power Plant. A break in a pipeline released over 110,00 gallons of No. 6 oil. The spill soon affected four counties and over 17 miles of river frontage. Over 20 federal and State agencies responded to the emergency. The Department assumed its position in the Unified Command along with the EPA and the responsible party. The Department also joined the Department of Natural Resources as joint trustees for the response. At one point, over 800 personnel were actively engaged in clean up efforts. Although the restoration efforts will be ongoing, an enormous amount of progress has been made. During this process, there were numerous public meetings to keep citizens informed of all aspects of the response and clean up.

MDE responds to oil spill at Chalk Point Power Plant.

What Challenges Does Maryland Face in Reducing the Presence of Hazardous Waste and Hazardous Materials in the Environment?

Smart Growth

Unless historically contaminated sites are remediated, business will continue to move away from urban areas in an effort to locate real estate in "greenfields." However, there are many barriers to remediation: some parties responsible for contaminated properties are unavailable, unable, or unwilling to conduct cleanup activities; responsible parties may not have the financial capacity to conduct cleanups; environmental cleanups are often complicated, difficult, and expensive; environmental cleanups may take many years to complete; the State has limited resources to require and oversee cleanups; and the Department faces difficulty retaining geologists to conduct oversight of cleanups. In the face of these challenges, MDE will continue to identify sites that may be contaminated by hazardous waste and prioritize the sites for cleanup, provide sole oversight of cleanups at 43 State Superfund sites, and conduct further assessments of sites having a high priority for environmental contamination and public health impacts. In addition, MDE will participate in decision-making with EPA, DOD, and responsible parties at all phases of environmental investigations and oversee cleanups at NPL sites and federal facilities, as funding and staff resources allow. MDE will also seek new EPA funding to provide oversight or evaluation of the many formerly used defense sites (FUDS) in the State that DOD is not currently working on or has not fully evaluated.

Hazardous Waste and Toxic Materials

The rates of generation of hazardous waste are often driven by economics, i.e., the more demand for products, the more manufacturing, thus the potential for more hazardous waste generation. The Department is reliant on the voluntary efforts of industry to reduce hazardous waste generation, to replace hazardous chemicals and products with less hazardous ones, and to implement pollution prevention activities. MDE's challenge is to find new and innovative ways to help industry reduce or eliminate hazardous materials.

MDE Emergency Response Personnel off-loads a Waste Sulfuric Acid Tanker.

The Department is committed to waste minimization and pollution prevention through outreach to the regulated community and will continue to conduct industry visits to promote implementation of pollution prevention technologies. Efforts will continue to focus on persistent, bio-accumulative, and toxic substances in the compliance and permitting process and emphasize the multi-media aspects of waste minimization and pollution prevention. This will ensure that true source reduction is achieved, rather than shifting pollutant emissions among media.

Eliminating Lead

About 95% of housing units in Maryland built before 1950 contain lead paint. MDE has done extensive outreach education on the potential problems of, and the solutions to, lead paint poisoning; however, these education and outreach programs must remain iterative. While MDE has worked extensively with rental property owners, managers, realty associations, and tenants to explain their rights and responsibilities under law, there are still many who are either unaware or non-compliant with the law. With over 74,000 rental properties built before 1950 registered, MDE remains challenged to locate, register, and monitor all properties that are a threat to public health.

Things You Can Do For The Environment

1. Learn whether your home has lead paint. If lead paint in your home is in poor condition, hire trained workers to make the necessary repairs.

2. Never pour automotive products, cleaning chemicals, pesticides, solvents, paints, and other chemicals down the drain, in the trash, onto the ground, or into storm drains.

3. Purchase only the amount of household chemicals that you will use. Give leftover cleaning products, paints, pesticides, and other hazardous chemicals that you no longer use to a friend, neighbor, or community group that can use them. If you cannot find someone to use them, check with you local health, environmental protection, or public works department to see if they have a household hazardous waste collection program.

4. If you spill a chemical, clean it up promptly according to the manufacturer's instructions. Kitty litter or some other absorbent materials are often helpful in cleaning up liquid spills. Remove grass and soil that may have been contaminated by the spilled material. Dispose of the spilled materials and cleanup materials according to direction from your local department of public works or environmental protection.

5. Look for and buy household chemicals that are less toxic/hazardous. Often these chemicals are water based.

6. Use rechargeable batteries. Recycle old batteries.

7. Use latex/water based paints instead of oil based paints.

8. Consider alternatives to chemical pesticides, including biological methods of control (predatory insects, viruses, and other microorganisms), mechanical methods of control (hand removal, use of traps, and cultivation), and cultural methods of control (insect resistant plants and building or landscape design). If you must use pesticides, buy only what you need, use the pesticides according to the manufacturer's guidelines, and store the pesticides safely.

9. Report hazardous materials spills promptly to the Department, 24-hours per day, at (410) 974-3551.

Goal 5

Ensuring Water is Clean and Safe for Harvesting of Fish and Shellfish

Maryland's seafood industry and recreational fishing in the Chesapeake Bay depend on consumers' confidence that fish, oysters, and clams from the Chesapeake Bay and its tributaries are of the highest quality. MDE's Shellfish Certification Program has been in place for decades and puts a strong emphasis on preventing pollutants from entering the waters of the State, monitoring the quality of shellfish harvesting waters, and testing edible fish tissue to certify that fish are safe for human consumption.

Are Maryland's Waters Safe for the Harvesting of Shellfish and Fish?

Shellfish

The presence of humans in any watershed increases the potential for an adverse impact on shellfish water quality. Impacts range from large and small sewage treatment facility's discharges and bypasses from sewage pumping stations, to failing septic systems and increased runoff from development and farm animal operations. Where sewage outfalls already exist, closed safety zones surrounding these outfalls are mandated and necessary to protect human health.

A Maryland mainstay. Fresh oysters harvested from the Chesapeake Bay.

In Fiscal Year 2000, 1,105,221 acres of shellfish harvesting waters were either approved or conditionally approved and 71,395 acres were restricted from shellfish harvesting (roughly a 95/5 ratio). Between 1999 and 2000 there was a net increase of 12,869 acres of shellfish waters restricted from harvesting. The majority of these closings were due to non-point source pollution influenced in some areas by a few years of above average rainfall. (Figure 5.1)

Acres of Shellfish Waters*

Year	Approved	Restricted	Conditional	%Restricted	% Conditional
FY - 1970	855,951	320,665		27.25%	
FY - 1980	1,109,346	67,270		5.72%	
FY - 1990	1,056,149	58,526	61,941	4.97%	5.26%
FY - 2000	1,067,931	71,395	37,290	6.0%	3.17%

** Based on total shellfish water surface acreage of 1,176,616*
+ Conditional means the area is closed to harvesting for 3 days following a rainfall of greater than 1" in 24 hours
There was no conditional area prior to 1987.

Figure 5.2 shows the ratio of shellfish harvesting waters approved and restricted over time as well as the dramatic increase in the population of counties adjacent to shellfish waters. Despite this population increase and its associated impacts to adjacent water quality, Maryland has been able to keep much of its shellfish water open and safe.

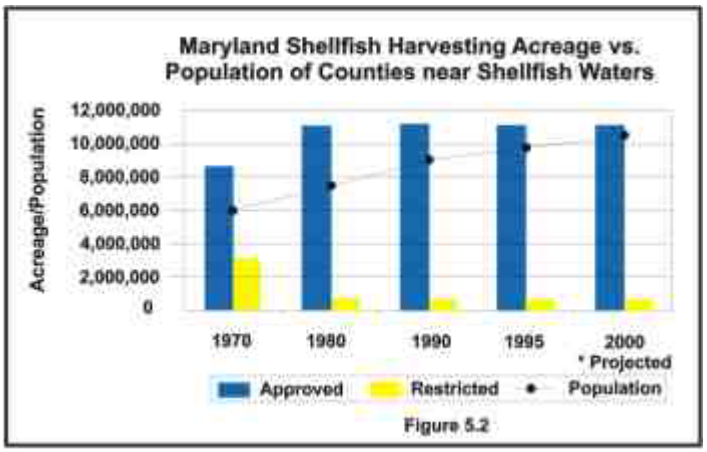


Figure 5.2

Fish

Past usage and inappropriate disposal of persistent organic substances have resulted in elevated levels of some hazardous substances in waterbodies near major urban centers. Certain fish in these waters, due to their feeding habits, metabolic activity, age and fat content, may accumulate these substances to levels which may be harmful to people consuming these fish frequently throughout their lifetime. The current advisories are the result of contamination due to past use of chlordane and PCBs, which are now banned.

Water Body	Affected Species	Picture	Consumption Advisory
Baltimore Channel	Channel Catfish American Eel	 **Channel Catfish**  **American Eel**	- No quantitative consumption advisory - Limit or avoid consumption of these species - Do not eat these fish as a **substantial** part of the daily diet - Women of childbearing age, infants, and children should avoid consumption of these fish.
Back River	Channel Catfish		- No quantitative consumption advisory

	American Eel	 **Channel Catfish**  **American Eel**	- Limit or avoid consumption of these species - Do not eat these fish as a **substantial** part of the daily diet - Women of childbearing age, infants, and children should avoid consumption of these fish.
Potomac River (DC to MD Point)	Channel Catfish American Eel Common Carp	 **Channel Catfish**  **American Eel**  **Common Carp**	- Should not eat more than 8 ounces of Channel Catfish greater than 16 inches - No quantitative consumption advisory for Eel or Carp however, it is recommended to limit or avoid consumption of these species as well because of similar feeding habits. - Do not eat these fish as a **substantial** part of the daily diet - Women of childbearing age, infants, and children should avoid consumption of these fish.
Lake Roland	Black Crappie		- No quantitative

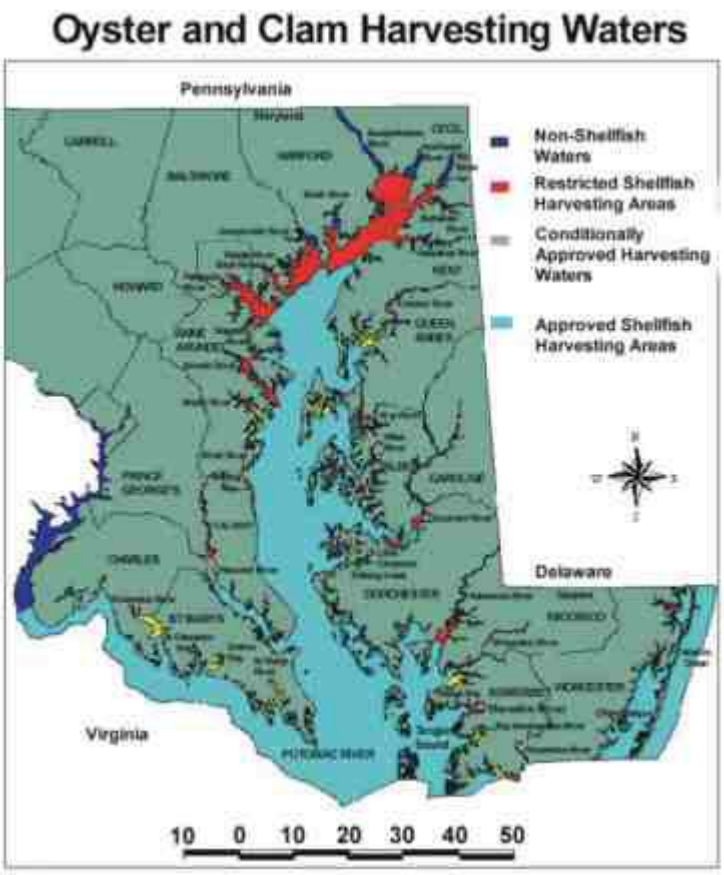
	Common Carp	 **Black Crappie**  **Common Carp**	consumption advisory - Limit or avoid consumption of these species - Do not eat these fish as a **substantial** part of the daily diet - Women of childbearing age, infants, and children should avoid consumption of these fish.

In April of 2000, the Department issued an advisory that fishermen should not eat more than 8 ounces per month of Potomac River eels and carp, or catfish larger than 16 inches. The advisory was coordinated with the Potomac River Fisheries Commission and the State of Virginia which issued a similar advisory. Follow-up monitoring was conducted in the Potomac, and testing was also conducted in the vicinity of the C&D Canal. This advisory continues as do the existing advisories in Baltimore Harbor (catfish, eel); Back River (catfish, eel); and Lake Roland (black crappie, carp).

What Action is Maryland Taking to Ensure that Maryland Waters are Safe for the Harvesting of Shellfish and Fish?

Monitoring and Surveying

The Department monitors monthly the quality of shellfish (oysters and clams) harvesting waters and edible fish tissue to certify that they are safe for human consumption. The Department collects water samples, analyzes the samples for bacteriological water quality, and conducts shoreline surveys to minimize or eliminate pollution sources. Monitoring is essential to protect human health since shellfish strain water through their gills to trap microscopic plants and animals for food. If the water is contaminated with disease-causing microbial organisms, such as bacteria or viruses, these can be consumed as food by shellfish. When shellfish from polluted waters are eaten raw or partially cooked, these shellfish can make people sick. Assuring that shellfish are harvested only from areas that are safe and open to harvesting minimizes the risk of human illness.



Chemical contaminant monitoring also is essential in protecting public health. Fish, shellfish and crabs can accumulate certain hazardous substances in their tissues. Monitoring for environmental contaminants in the edible tissues of these important living resources assists the State in determining which species are safe for consumption, and which waterways have unacceptable levels of contaminants that require the Department to take further pollution prevention and regulatory activities.

Fish Advisories

The Department issues fish consumption advisories when certain fish in contaminated waters accumulate high enough levels of toxic substances that, when consumed frequently over a lifetime, may increase the consumer's risk of adverse health effects. In waters covered by a fish consumption advisory, fishermen and consumers are advised to limit their consumption of certain fish species. The increase in the acreage of waterways with fish consumption advisories, (Figure 5.5), is the result of a Virginia Superfund site. In this case, the U.S. Environmental Protection Agency, the States of Maryland and Virginia, and the District of Columbia collectively determined that a fish consumption advisory was necessary for the Potomac River.

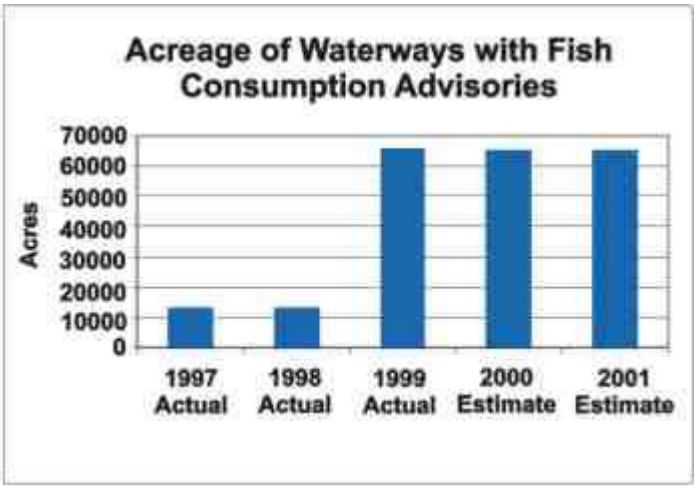


Figure 5.5

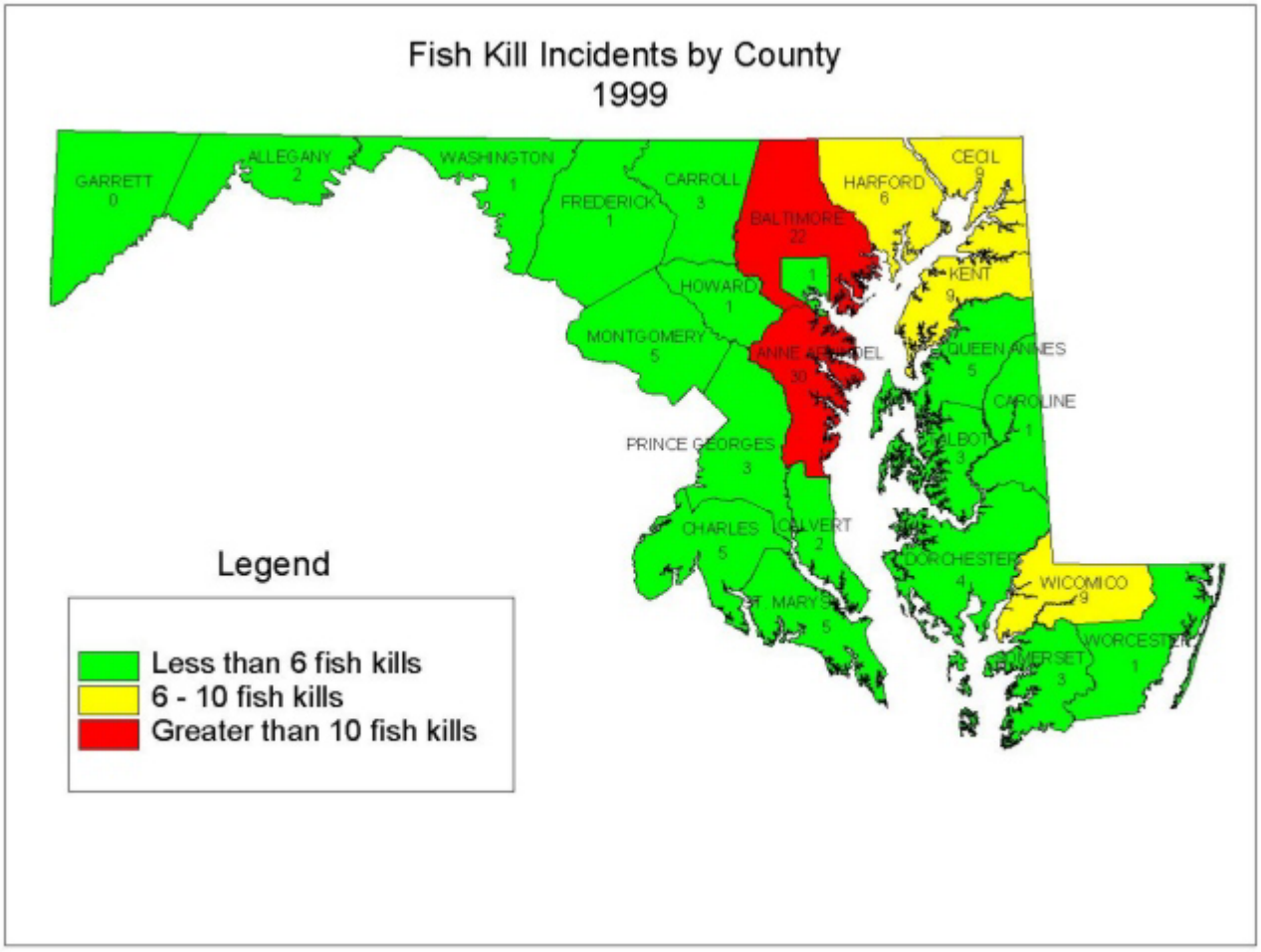
Investigation/Response

Fish and other aquatic organisms are indicators of potential pollution impairment to Marylands's waterways. The presence of dead fish may indicate that a toxic substance has entered the waterway. MDE manages and coordinates Maryland's interagency program to investigate fish kills in all waters of the State (MDE works with the Department of Natural Resources Police who are responsible for posting areas closed to harvesting, and for patrolling these areas to prevent illegal harvesting). The Department also receives, responds to, and interprets all reports of damaged fish. The investigative findings are acted on to enforce the water pollution laws of Maryland, protect public health, aid in resource management, and contribute to public outreach.

Fish kills are caused by a variety of natural and human induced circumstances. Each investigation seeks to determine the nature and extent of the event and establish a cause, if feasible. This responsibility requires MDE and the Maryland Departments' of Natural Resources (DNR), Health and Mental Hygiene, and Agriculture, County Health and Natural Resource Management Departments, and the EPA deal promptly and effectively with the investigation of fish kills. If a specific pollution source is identified, the appropriate follow up agency is contacted: DNR for fishery or human impact-related to fishing issues, MDE for pollution and enforcement, and the Coast Guard for oil spills. The investigative findings become invaluable evidence in support of water pollution enforcement litigation, or public health advisory decisions. In addition, if appropriate, findings are acted upon to require the repair of any damage done and the restoration of water resources to a degree necessary to protect the best interests of the people of the State. In 1999, there were 100 fish kills Statewide. (Figure 5.6 and 5.7)

The fish kill investigation program is an integral component of the current national project to identify and interpret the effects of *Pfiesteria Piscicida* and other harmful algae blooms (HAB's) in waters of the State, and relate the findings to various sources of nutrient pollution. To report a fish kill, call 1-800-633-6101, 1-800-285-8195, or 1-888-584-3110.

Year	Natural	*Low D.O.	Pollution	Unknown	Misc.	# of Kills	Total Kills
1985	0.1	49.4	0.996	49.5	0.004	4,500,000	108
1986	0.8	96.2	1	1	1	20,800,000	135
1987	9.6	82.4	4	2	2	1,000,000	133
1988	26.1	69.9	2	1	1	1,800,00	186
1989	0.8	44.8	1	53	0.4	409,000	117
1990	0.3	75.5	5	19	0.2	640,000	97
1991	59.9	4.1	11	5	20	177,000	118
1992	9.7	13.3	4	66	7	58,000	94
1993	6	17	11	3	63	75,000	102
1994	11.2	58.8	24	3	3	68,000	83
1995	1.2	91.8	1	5	1	127,000	101
1996	4	1	85	9	1	139,000	85
1997	0.2	61.8	35	1	2	305,000	103
1998	15	23.4	6.5	45.2	9.9	44,300	100
1999	4.3	91.8	2.4	0.2	1.3	790,475	132
2000	19.3	24.5	45.1	1.8	8.7	82,453	178


Fish Kill Incidents by County
1999
GARRETT
0
ALLEGANY
2
WASHINGTON
1
FREDERICK
1
CARROLL
3
BALTIMORE
22
HARFORD
6
CECIL
9
KENT
9
HOWARD
1
1
MONTGOMERY
5
ANNE ARUNDEL
30
QUEEN ANNES
5
CAROLINE
1
TALBOT
3
PRINCE GEORGES
3
CHARLES
5
CALVERT
2
DORCHESTER
4
WICOMICO
9
MARYS
5
SOMERSET
3
WORCESTER
1
Legend
Less than 6 fish kills
6 - 10 fish kills
Greater than 10 fish kills

What Challenges Does Maryland Face in Ensuring That Maryland Waters Are Safe for the Harvesting of Shellfish and Fish?

Smart Growth

As previously demonstrated in Figure 5.2, increased pressures on the water quality of the Chesapeake Bay from population growth and expanded development in surrounding regions and watersheds, present a huge challenge. Negative environmental impacts related to increased population development include more septic systems, additional stormwater runoff, and the loss of forest buffer.

MDE conducts shoreline/sanitary surveys of all shellfish harvesting areas to identify and evaluate pollution sources influencing the sanitary quality of shellfish waters. These factors may include actual or potential sources of pollution. Diligent evaluation and ongoing investigation of pollution sources influencing shellfish harvesting waters are essential to protect human health. Shellfish harvesting areas are facing huge challenges associated with increased development and population growth along the shoreline.

Pfiesteria, Harmful Algal Blooms, and Other Microbial Contaminants

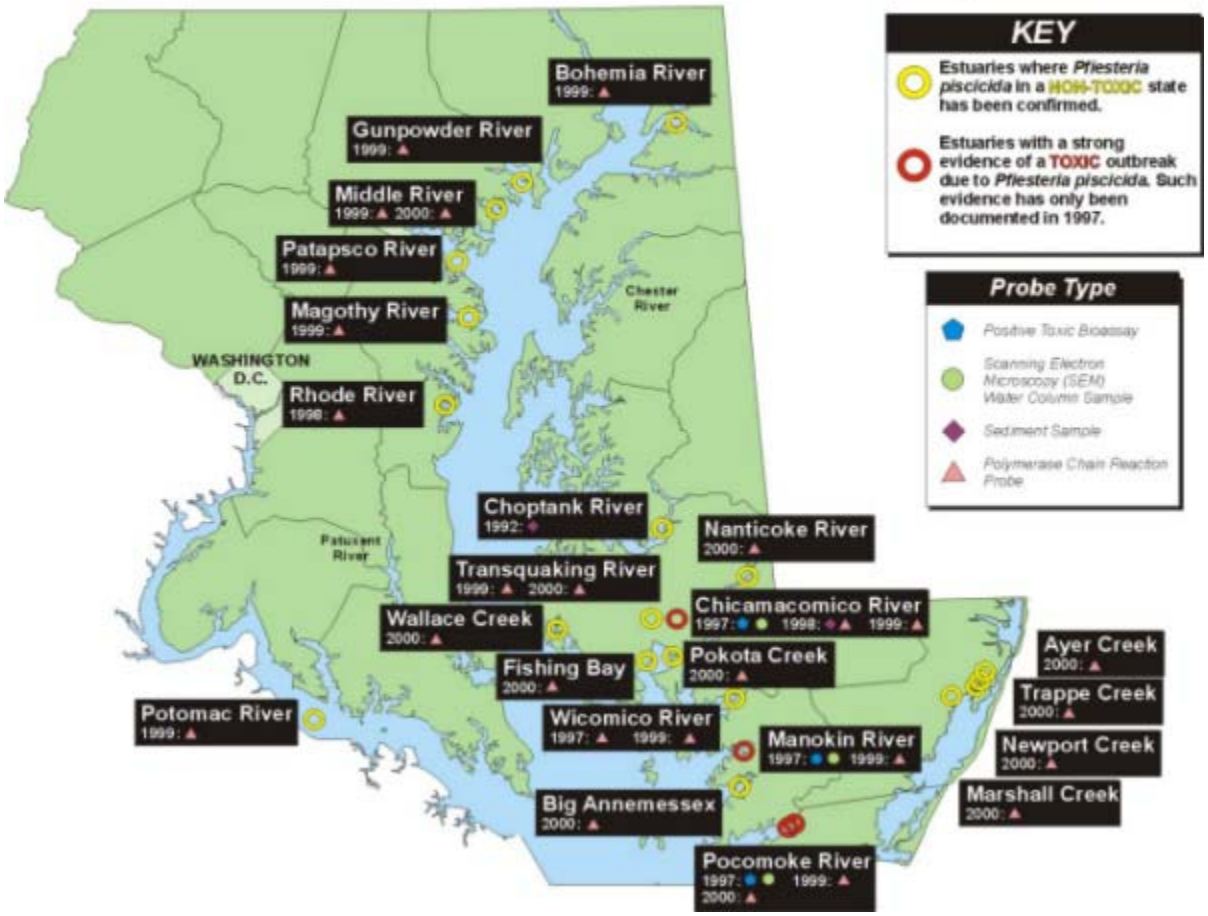
MDE is charged with the protection of environmental quality and the regulation of hazardous substances to assure the protection of both public and ecological health. To perform these responsibilities, MDE must monitor and investigate the State's shellfish and recreational fishing waters for environmental contaminants. Although chemical contaminants are commonly associated with pollution, an increasing number of microbial contaminants are also being associated with pollution and may also affect public and ecological health. Harmful algal blooms are included among these microbial contaminants and are related to excessive nutrient pollution. Some microbial species are associated with fish kills and disease episodes, as well as certain illness in humans and livestock. In 1997, a series of fish kill and disease episodes occurred in lower Eastern Shore tributaries. Reports of human illness preceded and accompanied these reports and the microorganism, *Pfiesteria*, was identified as a possible cause.

Menhaden Showing Signs of Pfiesteria

(Figure 5.8) *Pfiesteria* was added to a list of microorganisms considered potentially harmful to humans or fish. This list includes harmful algal species, as well as certain protozoa, bacteria, and viruses. Some of these micororganisms produce natural toxins; others do not. Monitoring programs and procedures were established to expand fish kill investigations and also address fish illness, problems believed associated with *Pfiesteria*. Although *Pfiesteria* itself has not generally been seen in the State during the past two years, other harmful algal species have bloomed in Maryland waters. Outbreaks of diseased fish or reports of human illness that caused concerns in the past have generally not recurred in Maryland. Alternative causes to *Pfiesteria* for past reports of

problems continue to be investigated. These include contamination of surface waters by chemical contaminants, as well as other harmful algal species and pathogenic microorganisms. All of these causes are associated with urban and agricultural activities, and point and non-point source wastes. Comprehensive water quality monitoring for chemicals, nutrients, and certain microbial contaminants in the lower Eastern Shore and other areas where *Pfiesteria* and diseased fish were found continued to be investigated this past year as alternatives and possible factors contributing to *Pfiesteria* and harmful algal blooms. Attention to a variety of chemical and microbial contaminants, including harmful algal blooms, in recreational fishing and shellfish waters of the State remains a challenge.

Areas where *Pfiesteria piscicida* has been detected in Maryland



Educating the Public

To protect public health, MDE's policy is to inform the public in the broadest possible manner. Maryland revises the public advisory listing and releases the information to the public whenever the data become available. The public can obtain copies of the printed advisory materials from MDE, local health departments, State public health departments, other State agencies, and businesses that issue fishing licenses.
It is also necessary to inform the public because the public also plays an important role in controlling the pollution of our waterways, thereby protecting the quality of State waters and the safety of harvesting fish, crabs, and shellfish.
Fish and shellfish advisory information is communicated to the public in several ways, including:

- Posting advisories in local areas;
- Distributing press releases to media sources (e.g. TV, radio, newspaper);
- Posting information on State internet sites (www.mde.state.md.us, www.dnr.state.md.us);
- Distributing annual fishing regulations booklet with fishing licenses;
- Distributing pamphlets or fact sheets;
- Publishing information in the State's Water Quality 305(b) report;
- Responding directly to public inquiries;
- Sending mailings to the public; and
- Distributing MDE's website and fact sheets at public events, such as the Maryland State Fair.
- If a shellfish area is newly classified as closed or open, MDE uses public notices in newspapers and maintains a mailing list of waterman so they are informed of any changes.
- In the event of an emergency impacting shellfish waters, MDE and DNR have a network in place to notify waterman in impacted areas.

Tips for Ensuring Safe Harvesting of Fish and Shellfish

- Properly dispose of old pesticides (chlordane, DDT, etc.) (410-631-3345).
- Report leaking transformers.
- Maintain routine maintenance of transportation vehicles.
- Properly dispose of thermometers (410-631-3345).
- Become knowledgeable and practice Department recommendations and guidance regarding advisories on the consumption of fish, crabs and shellfish in Maryland's waterways.
- If property is waterfront, consider adding riparian buffer zones to minimize runoff of excessive pesticides and nutrients.
- Keep a routine maintenance schedule for your septic system.
- Clean up after your pets and dispose of pet waste properly.
- Consider the Chesapeake Bay and its tributaries a seafood source and do not dump chemicals, soaps, pet waste, etc. down the storm drains.
- Report incidents of fish kills (1-800-628-9944, 1-800-633-6101, or 1-800-285-8195).

Goal 6

Improving and Protecting Maryland's Water Quality

Water quality protection and improvement in Maryland continues to be a paramount goal for MDE. The Department is required to ensure that the water resources of the State are maintained and protected. To meet this goal, MDE is implementing various programs to prevent point and non-point source pollutants from entering the waters of the State. The discharge permit program limiting discharges of industrial and municipal wastewater point source pollutants to surface and groundwaters, the erosion and sediment control program, and the stormwater management program that limits non-point sources of pollution during and after construction activities, are just a few examples of Maryland's water pollution control programs. MDE has strong regulatory programs such as regulation development, permitting, and enforcement, as well as non-regulatory or voluntary pollution reduction activities to help meet this goal.

Are We Protecting and Improving Maryland's Water Quality?

Maryland Stream Use Designations

Each major segment of water in Maryland is assigned a designated use. Waters that do not meet their designated uses represent a loss of a common resource that could result in economic and societal impacts and threaten human and ecosystem health. Maryland has determined that all surface waters in the State should be protected for basic water uses, such as water contact recreation; fishing; support of balanced and diverse populations of aquatic plants, animals and wildlife; and use as an agricultural and industrial water supply. For some defined uses, like trout fishing, shellfish harvesting and public water supplies, water quality conditions must be even higher.

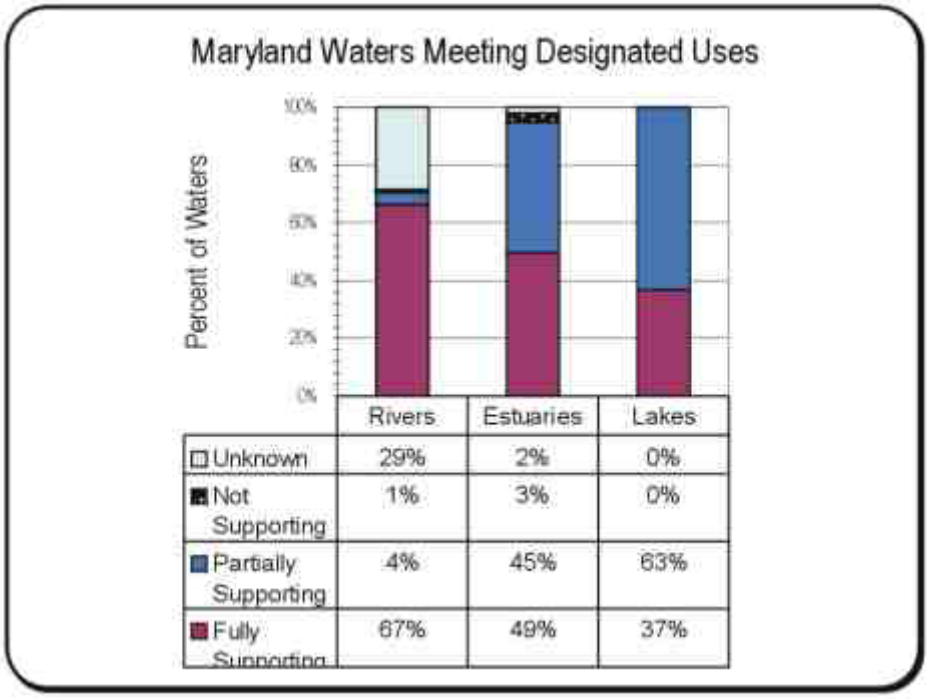


Figure 6.1

While, as figure 6.1 indicates, each designated use is not currently being met, our goal is to ensure that all Maryland waters meet their designated uses by 2008. All U.S. jurisdictions use the following terminology to rate their water quality for each individual use:

» Fully Supporting -- Water quality meets the designated use criteria.
» Partially Supporting -- Water quality fails to meet the designated use criteria at times.
» Not Supporting -- Water quality frequently fails to meet the designated use criteria.
» Unknown -- The designated use status of waters that are not directly monitored are listed as unknown.

The State of Maryland identifies seven Uses for its waters:
Use I: Protection of fish and aquatic life and contact recreation (fishable/swimmable);
Use I-P: Fishable/swimmable - including drinking water supply;
Use II: Shellfish harvesting;
Use III: Natural trout waters;
Use III-P: Natural trout waters - including drinking water supply;
Use IV: Recreational trout waters; and
Use IV-P: Recreational trout waters - including drinking water supply.
{All uses include agricultural and industrial water supply.}

What Actions Is Maryland Taking to Protect Maryland's Water Quality?

A major portion of MDE's efforts to achieve Maryland's water quality goals are accomplished through participation in the regional Chesapeake Bay Program, a watershed partnership that is working to restore the Bay. The partners in the Chesapeake Bay Program are: the states of Maryland, Pennsylvania, and Virginia; the District of Columbia; the U.S. Environmental Protection Agency; and the Chesapeake Bay Commission. However, the Chesapeake Bay Watershed extends far beyond those boundaries into the states of New York, Delaware and West Virginia. (Figure 6.2)

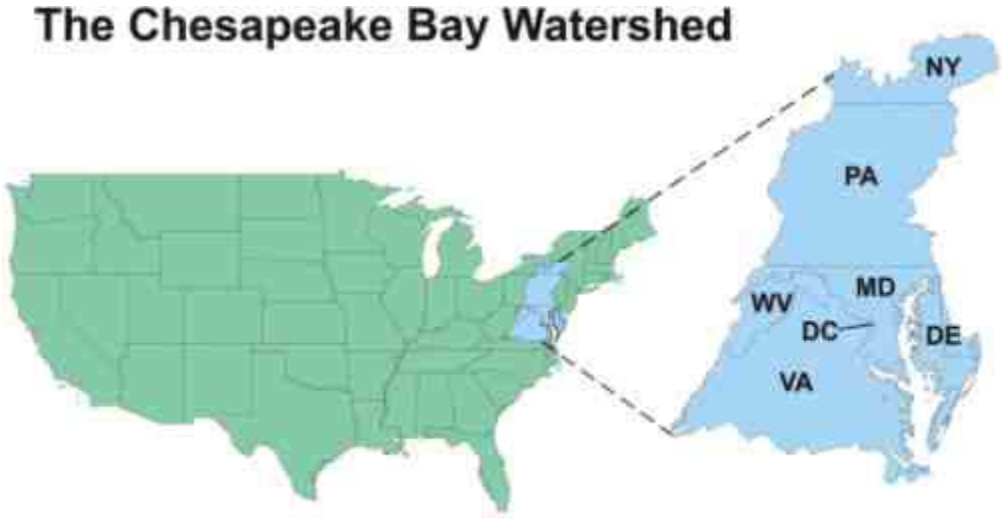


Figure 6.2

The regional Chesapeake Bay Program operates under the terms of the Chesapeake Bay Agreement, which was originally signed in 1983. The 1983 Agreement was a new cooperative effort that brought the partners together with a single focus – restoring the Chesapeake Bay. In 1987, the Bay Agreement was revised to include specific goals and commitments with defined timetables. For example, one goal was to reduce the controllable load of nutrients entering Chesapeake Bay by 40% by the year 2000. (Figure 6.3)

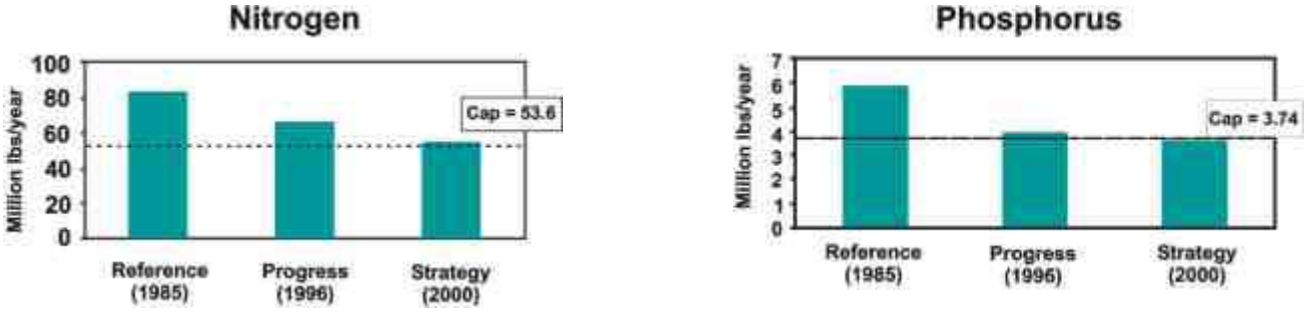


Figure 6.3

On June 28, 2000, Maryland Governor Parris N. Glendening, three-term Chair of the Chesapeake Executive Council, along with State and federal representatives of neighboring watershed jurisdictions, signed the new Chesapeake 2000 Agreement. Nicknamed "C2K", the new Bay Agreement continues the cooperative approach from 1983 and the goals and due dates from 1987 as a foundation for new commitments. Those new

commitments go further than those of the previous Agreements, setting new goals for the next decade. In addition, the Chesapeake 2000 Agreement clearly puts the responsibility for a clean Bay and healthy tributaries on all citizens of the watershed.

The Chesapeake 2000 Agreement is divided into five sections that contain commitments to protect and restore water quality, living resources, and vital habitats, while also promoting sound land use, stewardship, and community involvement. The new Agreement continues all Chesapeake Bay Program commitments made in previous agreements or Executive Council directives and adds major new commitments to move the Bay restoration forward.

Left to Right - District of Columbia Mayor Anthony Williams, Governor Parris Glendening, U.S. Environmental Protection Agency Administrator Carol Browner, and Lt. Governor Kathleen Kennedy Townsend.

As with previous agreements, the primary goal of the new Chesapeake 2000 Agreement is to restore water quality in the Bay and its tributaries so that it fully supports living resources, and also to maintain that water quality into the future. To help accomplish this goal, a new commitment was made to correct nutrient and sediment related problems in the Chesapeake Bay and it tidal tributaries and remove them from the federal list of "impaired waters" by 2010.

Accomplishing this commitment will require setting numerical sediment reduction goals for the first time, in addition to establishing increased nutrient reduction goals.

New commitments were also made to better manage and preserve land in the watershed. Specifically, the Agreement signatories made a major new commitment to conserve rural and resource lands by decreasing by 30% the rate of harmful sprawl development by 2010. In addition, a commitment was made to preserve 20% of all land in the watershed and permanently protect it from development.

The new Agreement also includes a new approach for managing wetlands across the entire Bay watershed. Using a three-prong approach, the new Agreement contains commitments to: (1) achieve a no-net loss of wetlands acreage and function through regulatory programs; (2) achieve a net resource gain by restoring 25,000 acres of wetlands by 2010; and (3) work with local governments to develop wetlands preservation plans for 25% of the land area in each state’s Bay watershed by 2010. The Agreement signatories also committed to evaluate the impacts of climate change on the Bay watershed, especially with respect to wetlands.

Other significant new commitments in the new Chesapeake 2000 Agreement include:

» Increase the number of native oysters tenfold by 2010.
» Establish harvest targets for Blue Crabs and implement management plans Baywide.

» Strive for zero release of chemical contaminants from point sources by 2010.
» Expand public access to the Chesapeake Bay by 30% by 2010 and add 500 miles of water trails by 2005.
As summarized by Maryland Governor Parris Glendening - "This Agreement takes us a long way toward our goals of a healthy, productive, living Chesapeake Bay, a restored Chesapeake Bay that will be our proudest legacy and our proudest achievement." Most of the new commitments in the new Agreement are scheduled for completion within ten years. The Bay Program partners are already using it to guide management actions. More information about the regional Chesapeake Bay Program and the new Chesapeake 2000 Agreement is available on the Internet at www.chesapeakebay.net

In Maryland, Chesapeake Bay Program activities are coordinated by the Governor's Council on the Chesapeake Bay, which was initiated in January of 1985 (Executive Order 01.01.1985.02). The Council, referred to as the Chesapeake Bay Cabinet, advises the Governor on management of the Bay watershed and surrounding areas that comprise the entire State of Maryland. The members of the Council are the Departments of Environment, Natural Resources, Agriculture, Planning, and Transportation, as well as the University of Maryland. These agencies work together to ensure that Maryland's environmental programs are well coordinated and integrated into a complete water quality management program.

Other advisory committees (e.g., State Water Quality Advisory Committee, Coastal and Watershed Resources Advisory Committee, and the Tributary Strategy Teams) all play a key role in the coordination effort, bringing key stakeholders into the planning, decision-making and implementation process. In particular, Maryland's Tributary Teams meet monthly in each of the Bay's ten major tributaries to help implement pollution prevention measures needed to address local water quality problems. These teams are laying the groundwork to ensure clean water and healthy rivers for future generations. A major focus of their efforts is controlling nutrient pollution from farm fields and horse pastures, wastewater treatment plants, construction and road building activities, and hundreds of thousands of suburban properties.

Other related activities include the federal Clean Water Action Plan (CWAP), Clean Water Act implementation, the Anacostia Watershed Restoration, the Maryland Coastal Bays Program, and the Baltimore Harbor Toxics Regional Action Plan, all of which are vital components of Maryland's environmental restoration and protection strategy. These activities will require the cooperative efforts of all Maryland citizens to be successful. Clearly, these efforts are closely related, have similar goals and approaches, and can be implemented in a coordinated manner that will strengthen all of the related programs for protecting the waters of the State.

Atmospheric Deposition of Nitrogen

Emissions of nitrogen oxides into the atmosphere from man-made sources are converted into nitrates (a form of nitrogen) that can be deposited in the Chesapeake Bay. Atmospheric nitrogen currently is responsible for approximately 25% of the nitrogen entering the Chesapeake Bay.

The primary man-made sources of nitrogen oxides include power plants, motor vehicles, off-road vehicles, lawn equipment, large industries, and boilers for schools and other large buildings. Air pollution control measures implemented by Maryland as a result of mandates under the federal Clean Air Act have helped and will continue to help reduce nitrogen oxide emissions across all source sectors, and thereby have helped to reduce atmospheric deposition of nitrogen to the Bay. The Vehicle Emission Inspection Program, mentioned earlier in this Report and which will remove 30 tons per day of emissions of nitrogen oxides, is a prime example of a Clean Air Act-mandated program that can have a positive impact on the Bay.

Figure 6.4

Unfortunately, not all states within the airshed of the Bay are controlling emissions of nitrogen oxides to the same degree. The Bay's airshed is 5 to 10 times larger than its 64,000 square mile watershed. (Figure 6.4) Emissions from many large sources with tall stacks far west of Maryland can be transported hundreds of miles by the prevailing winds to Maryland and the Bay. Stringent controls on these sources, comparable to those that exist on similar sources in Maryland, are not yet in place. However, such controls will be in place starting in June 2004, under a rule issued by PA to address NOx emissions that can be transported and which contribute to other states' ozone problems. Despite its air quality focus, this rule will benefit the Bay by virtue of its objective to reduce emissions of nitrogen oxides.

TMDLs

The Clean Water Act requires states to establish a Total Maximum Daily Load (TMDL) for each body of water that is impaired. A TMDL is an estimate of the maximum amount of a given pollutant that a body of water can assimilate without violating water quality standards. TMDL's have been a top priority for MDE over the past several years. From FY 1998 to FY 2001, the Governor and the legislature have allocated $4.13 million to MDE's TMDL program. In FY 2002, MDE expects an additional $1.5 million to continue this program.

A separate TMDL must be established for each substance that causes the water body to violate water quality standards. Established loading levels for the impaired water bodies is a required prerequisite to determining the permit conditions for new facilities or development in the watersheds. Such development will be affected by implementation of such policies as those embodied in Smart Growth. Maryland currently identified over 130 impaired waterbodies. Various combinations of water bodies and pollutants result in over 350 potential TMDLs Statewide. As a coordinating framework for Maryland's TMDL program, MDE has developed a whole basin, watershed cycling approach. This approach focuses on protecting

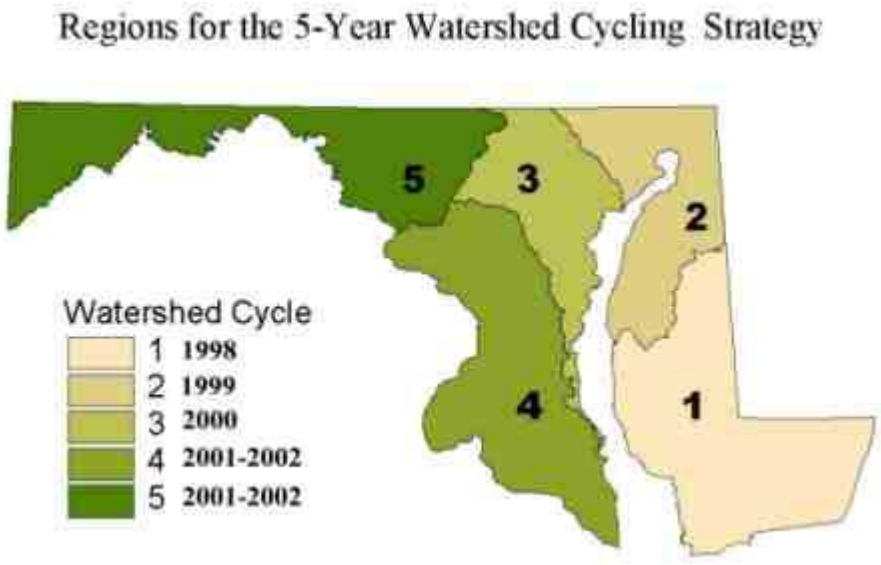


Figure 6.5

Maryland's water quality by developing and implementing TMDLs in a comprehensive fashion, by drainage basin. (Figure 6.5)

Each TMDL constitutes a scientific study, performed by specially-trained staff. Typically, the foundation of each study is the development of two models used to simulate the functions of the land draining to the water body, and the water body itself. The amount of information needed to construct these models greatly exceeds that which is needed to determine that the water body is impaired. Because TMDLs lead to regulatory outcomes with potentially significant impacts, these analyses are subject to intense technical, scientific and legal scrutiny over an approximate six-month review period after an initial draft TMDL is developed. For all of these reasons, the development of TMDLs in Maryland tends to be a long-term, deliberative process. The public is invited to become involved in the TMDL process. MDE staff provide introductory TMDL briefings, and more in-depth briefings are available to those who require more detail. For more information on TMDLs, please visit MDE's website @ www.mde.state.md.us/tmdl/index.html

Regulatory Program

MDE's water permitting programs provide the primary vehicle for implementation of regulatory improvements to water quality under this goal. MDE has adopted a watershed approach to assessment and renewal of discharge permits. Aligning permit renewal cycles for all the dischargers in a watershed enables inclusion of requirements benefiting the watershed in all the discharger permits at one time. In Maryland, there are approximately 850 point source dischargers, 412 municipal and 434 industrial. For the past five years, inspection services have been prioritized. The priority order is: complaints, violations, and follow-ups, and those permitted facilities which pose the highest risk to the environment or public health. With renewal of discharge permits comes new pollutant limitations determined necessary to maintain or improve water quality levels in the receiving stream or waterbody. New or improved treatment system construction to meet the new limits is covered through compliance schedules established by MDE. MDE is using compliance schedules to address issues associated with sewage collection system overflows. Collection systems carrying only sanitary sewage that overflows (SSOs), and those systems that carry sanitary sewage and stormwater having combined overflows (CSOs), present significant pollution concerns. Schedules for corrections of system-wide problems may take place across many years. In FY 2000, MDE conducted 7,024 inspections of surface water dischargers and 768 inspections of groundwater dischargers; provided a combined 203 compliance assistance actions; issued 34 corrective orders and 69 penalty actions; and collected over $1.6 million in administrative and civil penalties for discharge violations.

Non-point source erosion and sediment control and stormwater management programs control rainfall runoff associated with development sites during construction and after construction is completed. Plans are designed and approved based on best management practices (BMPs) standards established by MDE in two manuals: The 1994 Standards and Specifications for Erosion and Sediment Control, and the new 2000 Maryland Stormwater Design Manual which includes comprehensive criteria for water quality volume; criteria for design, selection and location of BMPs; and guidance on innovative site planning. MDE inspects all State and federal construction projects for compliance with erosion and sediment control and stormwater management plans, and inspects private construction in non-delegated jurisdictions for erosion and sediment control compliance. MDE conducted 7,089 inspections of private and 1,645 inspections of State or federal projects this year; provided 851 compliance assistance actions; issued 11 corrective orders and 36 penalty actions; and collected almost $100,000 in administrative or civil penalties for sediment and stormwater violations.

MDE's Annual Enforcement and Compliance Report provides detailed information on the regulatory functions performed by MDE staff. Actual data by fiscal year is available each Fall. For more information on the report, visit MDE's website at www.mde.state.md.us.

Concentrated Animal Feeding Operations

An important component of Maryland's water pollution control strategy includes control of nonpoint source pollution from animal feeding operations. A recent accomplishment includes development of Maryland's Concentrated Animal Feeding Operations (CAFO) compliance and enforcement strategy, which EPA has approved. This is a direct result of the Water Quality Improvement Act of 1998 that requires all farms in Maryland to implement nutrient management plans by certain dates. This has changed Maryland's strategy from the traditional voluntary pollution control for agriculture to mandatory requirements.

In FY 2000, Maryland is also taking this one step further by pursuing a "co-permit" with the poultry industry that would serve as the functional equivalent of a permit, and will require the poultry industry to share the responsibility for managing poultry waste with the contract farmers. Maryland is the first state to implement CAFO requirements and to propose a co-permit requirement. Maryland will continue to work with EPA and the agricultural community to develop reasonable approaches to improving current animal waste management practices.

Sewage Sludge

Improperly managed sewage sludge utilization or disposal practices can result in pollution of ground and surface waters, with the potential for impacting well water users, surface water drinking supplies, and boaters. It can also propagate disease vectors such as rats, flies and mosquitoes. Polluted water degrades the health and comfort of Maryland citizens and harms the environment and creatures that depend on it. (Figure 6.6)

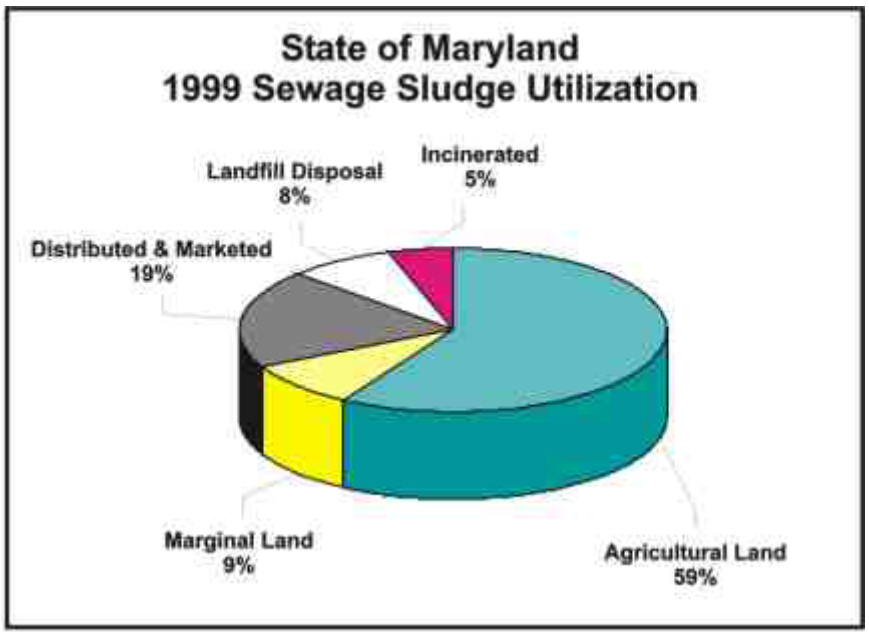


Figure 6.6

Currently, 87% of sewage sludge generated in the State is recycled through land application, pellitizing and composting. MDE regulates the collection, handling, burning, land application, storage, disposal, and transportation of sewage sludge. The Department’s permitting and enforcement activities prevent and control pollutant releases through the careful assessment of proposed utilization sites and practices, pollution control technologies, routine monitoring of sewage sludge generation facilities and application sites, and complaint investigations. In FY 2000, MDE conducted 804 inspections of sewage sludge permittees; provided 60 compliance assistance actions; and took 14 penalty actions.

Abandoned Mines and Acid Mine Drainage

Abandoned mines constitute land safety hazards for humans and environmental stressors through disturbance or destruction of terrestrial habitat for plant and animal species. (Fig. 6.7) Abandoned mines can also be a source of stream pollutants damaging aquatic communities. The Department's long-term goals are to restore Maryland's ecosystems impacted by pre-law abandoned mines to a healthy condition, to restore the quality of terrestrial habitats, and return the land to productive use. (Fig. 6.8) To achieve these goals, MDE staff designs and manages construction contracts for projects that include extensive earthwork, acid mine drainage treatment systems, stream restoration, water supply replacement, mine subsidence control, and other projects. Additionally, the program conducts watershed assessments and is partnering with a growing coalition of local stakeholders to restore streams impacted by acid mine drainage. MDE also regulates the activities of existing mining operations and works with the mining industry to reclaim abandoned mines. (Figures 6.9 - 6.10)

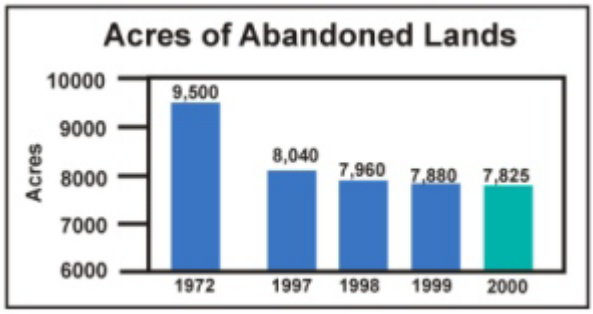


Figure 6.7

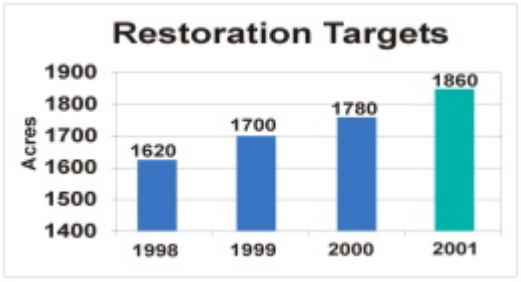


Figure 6.8

The Department is achieving our short-term goal of reclaiming an average of 55 acres a year of abandoned mine sites, making the sites safe and environmentally productive. The amount of miles or acres reclaimed may vary based upon available funding, project complexity, and size of individual projects. In some areas of the State, acidic waters from abandoned mines (suspended solids/sediments from coal and noncoal mines, and acid and metals from coal mines) may affect aquatic life and limit uses of these waters. The Department is achieving our short-term goal of restoring an average of 4.5 miles a year that have been degraded by abandoned mine sites, making the sites safe and environmentally productive. In FY 2000, MDE conducted 897 inspections of coal mining sites, and 352 inspections of non-coal sites; provided a combined 28 compliance assistance actions; issued 9 corrective orders and 2 penalty actions; and collected $1,050 in administrative or civil penalties for mining violations

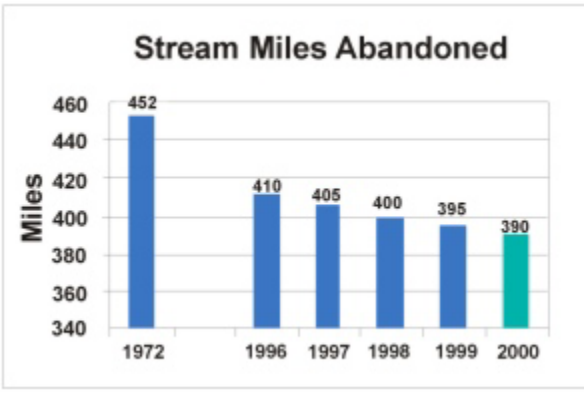


Figure 6.9

Figure 6.10

"Significant strides have been made in the clean-up of acid mine drainage in Georges Creek. The annual stream side trash clean-up is showing less and less garbage. The citizens are getting the message. The stream is now a resource."

"The partnership between MDE and the mining industry over the last couple of years has allowed us to combine our efforts and to see success in addressing the pre-law acid mine drainage and abandoned mine problems and to eliminate these detrimental impacts to the environment. We are looking forward to expanding our relationships to include other government agencies, other states, universities, as well as citizen groups."

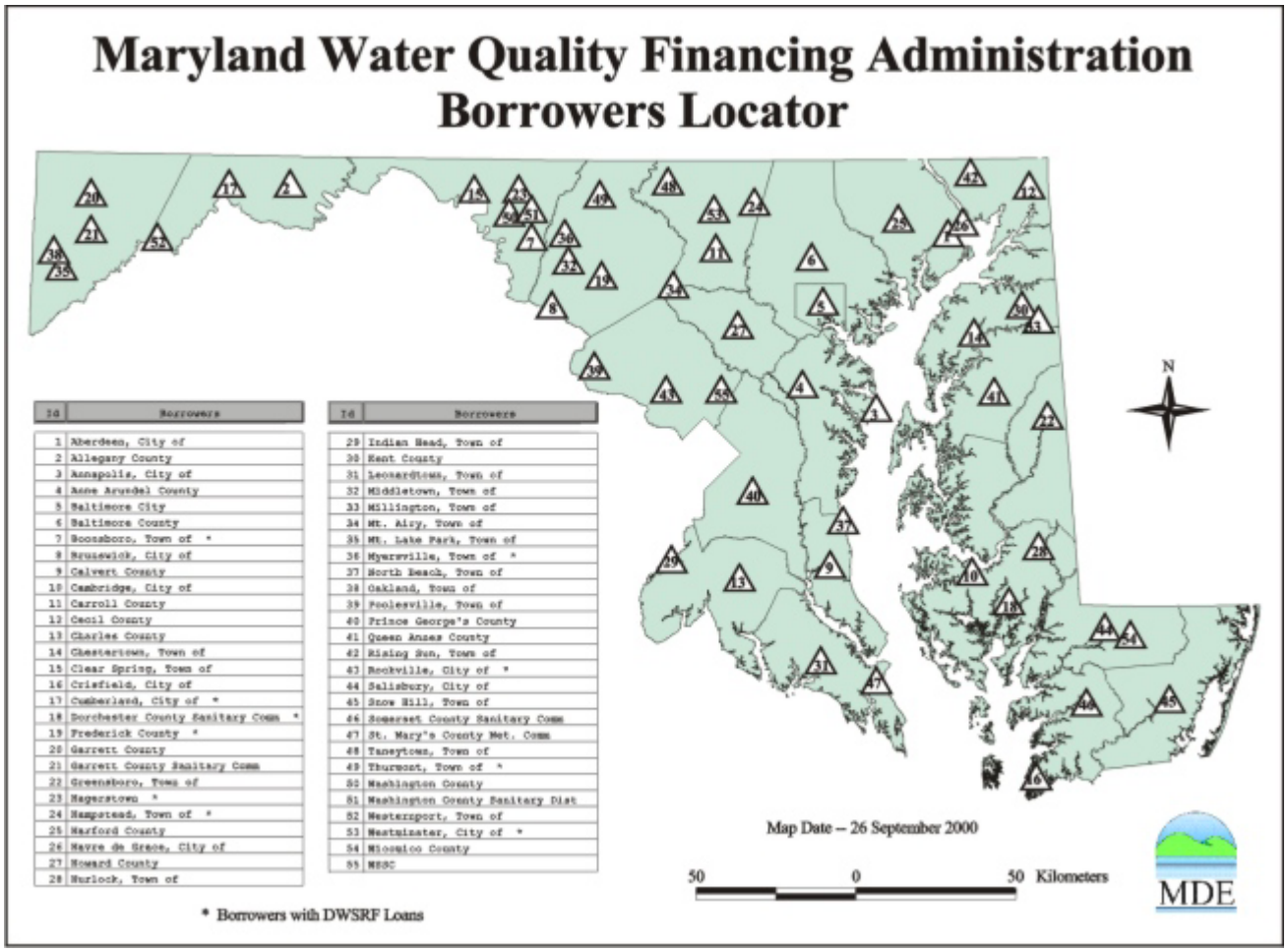
Customer Financial Assistance Programs

The Department utilizes numerous financial assistance methods for controllingand preventing water pollution.

These include the following programs:

The Water Quality State Revolving Loan Fund (WQSRF) is a low interest loan program that may be used to finance the planning, design and construction of capital projects to upgrade wastewater collection and treatment systems, and to finance capital projects to address non-point source water pollution. Examples of non-point source capital projects that may be funded include: landfill leachate collection and treatment systems, landfill capping, replacement of failing on-site septic systems, shoreline erosion control, wetland creation, and urban and agricultural best management practices. Since its inception in 1988, the WQSRLF has financed over $533 million in capital projects to 49 local government projects in Maryland. (Figure 6.11)

City of Bowie Water Treatment Plant



Id	Borrowers
1	Aberdeen, City of
2	Allegany County
3	Annapolis, City of
4	Anne Arundel County
5	Baltimore City
6	Baltimore County
7	Boonsboro, Town of *
8	Brunswick, City of
9	Calvert County
10	Cambridge, City of
11	Carroll County
12	Cecil County
13	Charles County
14	Chestertown, Town of
15	Clear Spring, Town of
16	Crisfield, City of
17	Cumberland, City of *
18	Dorchester County Sanitary Comm *
19	Frederick County *
20	Garrett County
21	Garrett County Sanitary Comm
22	Greensboro, Town of
23	Hagerstown *
24	Hampstead, Town of *
25	Harford County
26	Havre de Grace, City of
27	Howard County
28	Hurlock, Town of

Id	Borrowers
29	Indian Head, Town of
30	Kent County
31	Leonardtown, Town of
32	Middletown, Town of
33	Millington, Town of
34	Mt. Airy, Town of
35	Mt. Lake Park, Town of
36	Myersville, Town of *
37	North Beach, Town of
38	Oakland, Town of
39	Poolesville, Town of
40	Prince George's County
41	Queen Annes County
42	Rising Sun, Town of
43	Rockville, City of *
44	Salisbury, City of
45	Snow Hill, Town of
46	Somerset County Sanitary Comm
47	St. Mary's County Met. Comm
48	Taneytown, Town of
49	Thurmont, Town of *
50	Washington County
51	Washington County Sanitary Dist
52	Westernport, Town of
53	Westminster, City of *
54	Wicomico County
55	WSSC

The Biological Nutrient Removal Program – provides a 50% state/50% local cost share grant program to reduce the level of nitrogen and phosphorus entering the Chesapeake Bay and its tributaries from 66 targeted wastewater treatment plants. Since its inception in 1984 (one of several programs created in response to the 1983 Chesapeake Bay Agreement), the BNR Program has provided over $145 million in capital projects at 60 publicly owned waste water treatment plants in Maryland.

"The Biological Nutrient removal (BNR) project at Cumberland's Wastewater Treatment Plant is currently under construction and is over 60% complete. The City of Cumberland is proud to be doing its part to reduce nutrients to the Potomac River and the Chesapeake Bay. The City appreciates the State's share of the funding, because without that State funding and the State Revolving Loan Program, the project could not be done."

Cumberland Mayor Lee N. Fiedler

The Supplemental Assistance Program – provides grants to local governments to address compliance related wastewater collection and treatment problems, and is targeted to communities in need of grant assistance to make a needed capital improvement project affordable to the rate payers. Since its creation in 1983, this grant program has provided over $41 million to local governments in Maryland.

Cumberland Waste Water Treatment Plant

The Small Creeks and Estuary Restoration Program – provides up to 50% of eligible capital project costs for projects undertaken by local governments to restore degraded stream channels, riparian buffers and wetlands. Since its inception in 1990, the Small Creeks and Estuary Restoration Program has provided over $12 million for capital projects to local governments in Maryland.

The Urban Stormwater Pollution Control Program – provides up to 75% of eligible capital project costs for projects undertaken by local governments to install stormwater management facilities in urban and suburban areas that were substantially developed prior to State requirements to provide stormwater management. Since its inception in 1984 (one of several programs created in response to the 1983 Chesapeake Bay Agreement), the Urban Stormwater Pollution Control Program has provided nearly $19 million for capital projects to local governments in Maryland. For more information on MDE's WQSRLF, Supplemental Assistance, Small Creeks and Estuaries, or Urban Stormwater Capital Programs, please call the Capital Planning Program at 410-631-6683.

What Challenges is Maryland Facing to Protect and Improve Maryland's Water Quality?

Smart Growth/Population

Sprawl is a major challenge, and it is has a major impact on Maryland's water quality. It is driven by population growth, decreasing household sizes, trends toward larger lot sizes, and out-migration from existing community centers. For example, low density development is a major contributor of nutrients to local waterways. Research has revealed that low-density development (1 unit per 5 acres) contributes nearly 17 times more phosphorus and 24 times more nitrogen per dwelling unit than higher-density development. Septic systems are the predominant form of sewage treatment in low-density areas. Newer system designs that allow for nutrient removal are expensive and rarely utilized. Low-density development also increases the use of automobiles that consume gasoline and contribute nitrogen to the air that is subsequently deposited into waterways.

Nutrient Deposition into the Chesapeake Bay

The major challenges to meeting and then maintaining Maryland's goal of reducing the levels of nutrients entering the Chesapeake Bay from controllable resources by 40% by the year 2000 include incomplete science, limited resources (e.g., for monitoring, scientific review, etc.), and non-compliance with established regulations. If any one of these inhibitory barriers is present, elevated levels of contaminants may be allowed to enter the aquatic environment from both point and/or non-point sources and thus cause acute and/or chronic adverse effects to both human health and the aquatic ecosystem.

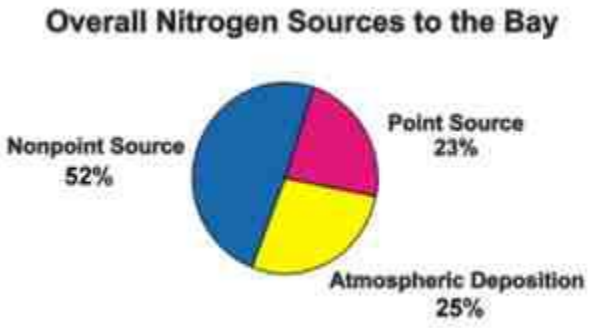


Figure 6.12

Today, excess phosphorus and nitrogen enter our waters from both point sources (e.g., wastewater treatment plants) and nonpoint sources (e.g., agricultural fields, urban runoff, and air deposition). (Figure 6.12) While there are numerous regulatory control measures and voluntary initiatives to reduce nutrient deposition, some of the deposition comes from sources beyond our control. Nitrogen from atmospheric emissions that are deposited in the Chesapeake Bay watershed and directly onto Bay waters contributes to the nutrient levels in the Bay. Approximately 75% of that atmospheric nitrogen originates from emission sources located outside the Chesapeake Bay watershed. Without cooperation from neighboring states, this atmospheric deposition will continue.

Total Maximum Daily Load (TMDLs)

By federal law, Maryland is obligated to establish about 350 separate TMDLs for waters identified on the 1998 list of impaired waters. Total Maximum Daily Loads (TMDLs) are measures that specify the maximum level of specific contaminants that can safely be absorbed by waterbodies to assure the protection of their designated uses for drinking water, swimming, fishing, recreation, and support of aquatic life. The technical rigor, complexity, and cost of many future TMDLs are expected to increase as the more challenging TMDLs are developed. Another TMDL challenge will be assuring public involvement in the development of water quality standards and TMDLs.

Sewage Overflows

Communities in Maryland with combined sewer overflows (CSOs) or sanitary sewer overflows (SSOs) need to make extensive improvements to prevent water pollution. MDE is working with EPA to address CSOs and SSOs in Maryland. The eight CSO communities (Allegany County, Baltimore City, Cambridge, Cumberland, Frostburg, LaVale, Salisbury, and Westernport) have discharge permits that require CSO improvements and are under administrative or judicial orders with MDE. Cambridge and Baltimore City have multi-million dollar capital projects to implement sewer separation over the next few years. MDE has filed judicial complaints to require the Western Maryland CSO communities to develop Long Term Control Plans with actual completion dates. Several major cases targeting SSOs are also under development. Correcting CSO and SSO problems often requires expensive, long term, complex construction involving excavation in public streets and right-of-ways over long stretches and encountering many variations in topography, soils and needs regarding public access.

Statewide, it is now estimated that to eliminate Maryland's CSO and SSO problems would require an investment of between $500 million and $1 billion over the next 20 years.

Things You Can Do To Protect Maryland's Water Quality

1. Report any dumping of inappropriate materials into storm water drains (such as oil, antifreeze); and construction sites over 5 acres that do not have erosion or sediment controls, to your local municipal officials.
2. Use good housekeeping practices with lawn care chemicals, oil, gasoline, pet wastes, etc.
3. Help to start or participate in programs to recycle and safely dispose of used oils and household hazardous wastes and containers.
4. Tell others about pollution runoff and storm water runoff and what they can do to help.
5. Plant trees, shrubs and ground cover to protect bare soil and reduce runoff.
6. Create a "rain garden" to keep rain water in your yard to replenish plants.
7. Try composting to recycle yard wastes and reduce fertilizer use.
8. Find alternatives to the chemicals you use on your lawn.

Goal 7

Ensuring Adequate Protection and Restoration of Maryland's Wetlands Resources

Ensuring that Maryland's valuable wetland resources are protected, achieving the State's goal to attain no-net overall loss in wetland acreage and function, and striving for a net resource gain in wetlands over present conditions are very important environmental goals for Maryland.

Wetlands on Maryland's Eastern Shore

Wetlands play an important role in the preservation and protection of the Chesapeake Bay, the Coastal Bays, and other waters of the State. Wetlands reduce pollutant loadings, including excess nutrients, sediment and toxics; attenuate floodwaters and stormwaters; provide shoreline stabilization and erosion control; provide habitat for many species of fish, game and nongame birds, and mammals, including rare and endangered species; and provide food chain support and timber production.

Wetland losses are resulting from sea level rise; shoreline erosion; and land development and resourceutilization activities. Over the course of Maryland's post-colonial history, it is estimated that some 300,000 acres of wetlands have been lost. Since the 1940's, approximately 60,000 acres of wetlands were lost during a period of explosive growth and intensive land use. The consequencs of not restoring Maryland's wetlands base to pre-1940 levels are that valuable wildlife habitat and ecological filtering benefits will be permantly lost.

Is Maryland Adequately Protecting and Restoring Maryland's Wetland Resources?

Wetland protection and management in Maryland continues to achieve the State's no-net loss goal. In recent years, MDE's regulatory program has limited the loss of vegetated tidal wetlands to less than one acre per year. More importantly, Maryland is realizing a net gain in tidal wetlands through mitigation and enhancement projects. (Figure 7.1)

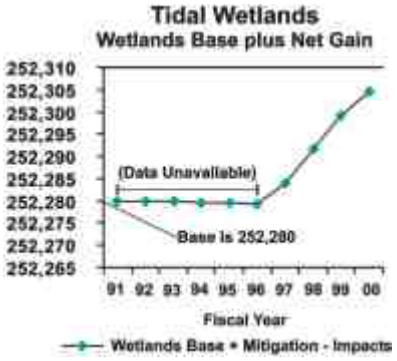


Figure 7.1

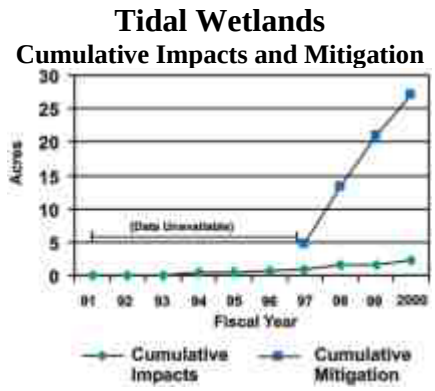


Figure 7.2

Over the past year the Department continued this trend with authorized losses of 0.56 tidal acres, offset bythe creation of 6 acres of tidal wetlands. (Figure 7.2) Since the inception of the State's nontidal wetlandregulatory program in 1991, nontidal wetland losses have averaged approximately 38 acres per year.

(Figure 7.3) Over the past year, the Department authorized losses of 37.67 nontidal acres, which weremitigated by the creation, restoration, or enhancement of 112.59 acres of nontidal wetlands. (Figure 7.4)

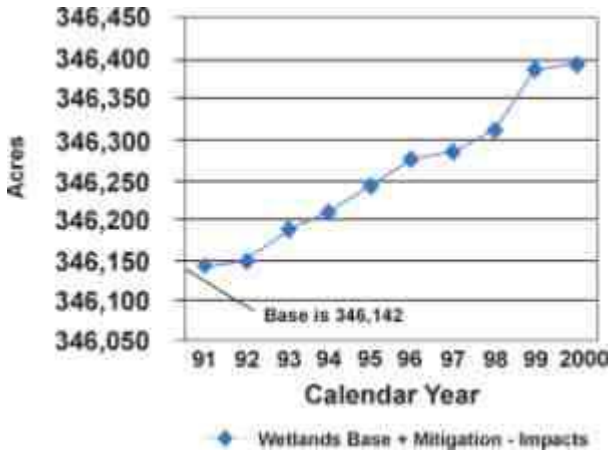


Figure 7.3

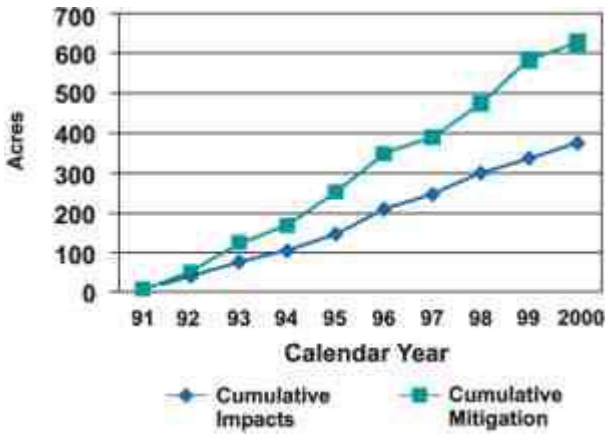


Figure 7.4

Although the no-net-loss goal has been achieved through the regulatory program, Maryland has not been able to produce a significant resource gain. The inability to replace wetlands historically lost is the driving forces behind Governor Glendening's Wetlands Restoration Initiative.

What Actions is Maryland Taking to Protect and Restore Wetlands?

Regulatory

MDE's Wetlands and Waterways Program administers regulatory and planning functions that address the protection, conservation, and management of Maryland's tidal and nontidal wetlands, waterways, and floodplains. From its inception, Maryland's nontidal wetlands protection program was designed to parallel many aspects of Section 404 of the Clean Water Act (CWA).

Regulated activities include:

- Removal, excavation, or dredging of soil or materials of any kind;
- Changing existing drainage or flood retention characteristics;
- Disturbance of the water level or water table by drainage, impoundment, or other means;
- Filling, dumping, discharging of material, driving piles, or placing obstructions;
- Grading or removal of material that would alter existing topography; and
- Destruction or removal of plant life

Four aspects of Maryland law differ from federal regulation: isolated wetlands, the alteration of vegetation and hydrology, and regulation of a 25-foot buffer. Buffer requirements are expanded to 100 feet for "nontidal wetlands of special State concern." These wetland areas are designated by regulation and mapped as having exceptional ecological or educational value of statewide significance. These regulatory differences recognize that the benefits provided by a wetland depends on its hydrology and vegetation and that activities immediately adjacent to a wetland may have as much effect on its function as activities in the wetland.

Wetlands, Garrett County, Maryland

Recent federal court decisions have also highlighted the importance of Maryland' regulatory program. Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (Corps) regulates the discharge of dredged or fill material into navigable waters. In 1993, under the Tulloch Rule, the Corps exerted jurisdiction over excavation activities that involved the removal of material from waters, such as draining, landclearing and ditching. In American Mining Congress v. U.S. Army Corps of Engineers (1997), the United States District Court for the District of Columbia struck down the Tulloch Rule stating that the Corps lacked the statutory authority to regulate excavation, draining, and other activities resulting in "incidental fallback." Since MDE regulates excavation activities through the Nontidal Wetlands Protection Act, however, the Court ruling did not weaken wetland protection in Maryland. Similarly, in United States v. Wilson (1998), the Fourth Circuit Court of Appeals ruled that federally regulated wetland resources must have an interstate commerce connection. Once again, the Court ruling did not weaken wetland protection in Maryland, since MDE's jurisdiction over intrastate and nonnavigble waters and wetlands is not constrained by the commerce clause.

Through the regulatory program, which began in 1991, the Nontidal Wetlands Protection Act has achieved many of its goals. The program continues to achieve its "no net loss" objective and continuous efforts are undertaken to enhance the efficiency of the regulatory process. Successful streamlining actions have included the merger of the Nontidal Wetlands, Waterway Construction, and Water Quality Certification Divisions to form the Nontidal Wetland and Waterways Division, resulting in a consolidated application review process and issuance of a single permit for activities in floodplains, waters of the State, and nontidal wetlands.

Through its permit application review process, MDE attempts to first, prevent wetland loss through avoidance, and then, for impacts that are unavoidable, to reduce nontidal wetland impacts through minimization. Once these opportunities for avoidance and minimization have been exhausted at a site, the focus shifts to mitigation. Proposed nontidal wetland impacts may be eliminated through an alternative analysis by identifying available sites in the project area that are more environmentally acceptable. Once it has been determined that a site is suitable for a proposed project, wetland impacts are minimized to the greatest extent possible by relocating elements of the project to uplands.

Wood Duck

Little Meadows, Garrett County, Maryland

Mitigation is required for all unavoidable wetland impacts that are authorized by the Department. This means that all loses of wetland acreage, function and value must be replaced by the applicant. This is usually accomplished by requiring the creation of new wetlands, restoration of relic wetlands, enhancement of degraded wetlands, or some acceptable combination. Furthermore, in order to ensure adequate replacement, the acreage of created, restored or enhanced wetland may exceed the acreage impacted by the project. In FY 2000, MDE conducted 4,103 nontidal wetlands and floodplain inspections and 1,103 tidal wetlands inspections; provided a combined 348 instances of compliance assistance; issued 1 corrective order and took 21 penalty actions; made 1

referral to the Attorney General for possible criminal action; and collected $3,000 in administrative and civil penalties for violations.

In addition to nontidal wetlands, the Department is also responsible for addressing potential impacts to the State's waterways. Authorization is required to conduct any activity that changes the course, current or cross-section of a nontidal stream or body of water, including the 100-year floodplain. Waterway construction activities are evaluated to insure that they do not create flooding on upstream or downstream property, as well as to protect aquatic resources, including the maintenance of fish habitat and migration, from degradation. The Department also has been establishing mechanisms to enhance customer service through pre-application meetings, which enable MDE staff to review projects during the planning stages in cooperation with local governments. Using this strategy, all regulatory requirements can be addressed, contradictory requirements can be identified, and an environmentally sensitive project can be designed that complies with both State statutes and local ordinances.

Regulatory Partnerships

MDE looks beyond the State environmental programs to local and federal government authorities to develop partnerships that take advantage of similar requirements. The goal of these partnerships are not only to establish an efficient regulatory process that eliminates duplicate government actions, but also to produce a strong commitment to resource protection, restoration, conservation, and management.

An important focus for MDE is the development of federal, State and local partnerships to enhance the success of the regulatory program and address wetland management issues in a comprehensive manner. The best illustration of MDE's partnership initiatives is the Maryland State Programmatic General Permit (MDSPGP), which was issued by the U.S. Army Corps of Engineers (Corps) on June 18, 1996. The permit, which became effective on July 1, 1996,

incorporates both federal and State regulatory standards and authorizes activities in coastal and inland waters and wetlands with minimal adverse environmental impacts. The goals of the MDSPGP are to provide a comprehensive protection program for waters of the State, including wetlands; reduce the administrative burden of the program for both the Corps and the State through interagency regulatory cooperation; improve the regulatory response time; and add predictability to the permit program.

An important aspect of the MDSPGP is that State and federal resource agencies have the opportunity to review and comment on any application. Activities potentially impacting sensitive resources can be identified by MDE using a geographic information system which targets threatened/endangered species and historical/cultural resources, or by a resource agency monitoring applications on the Regulatory Analysis Management System permit tracking system. In addition, the Corps also retains discretionary authority to require an individual permit for any proposed activity. For instance, the Corps may require an individual permit if it determines that there are significant individual or cumulative impacts; impacts to threatened or endangered species; impacts to cultural or historical resources; impacts identified during the public interest review; or a federal resource agency requests a "kick-out."

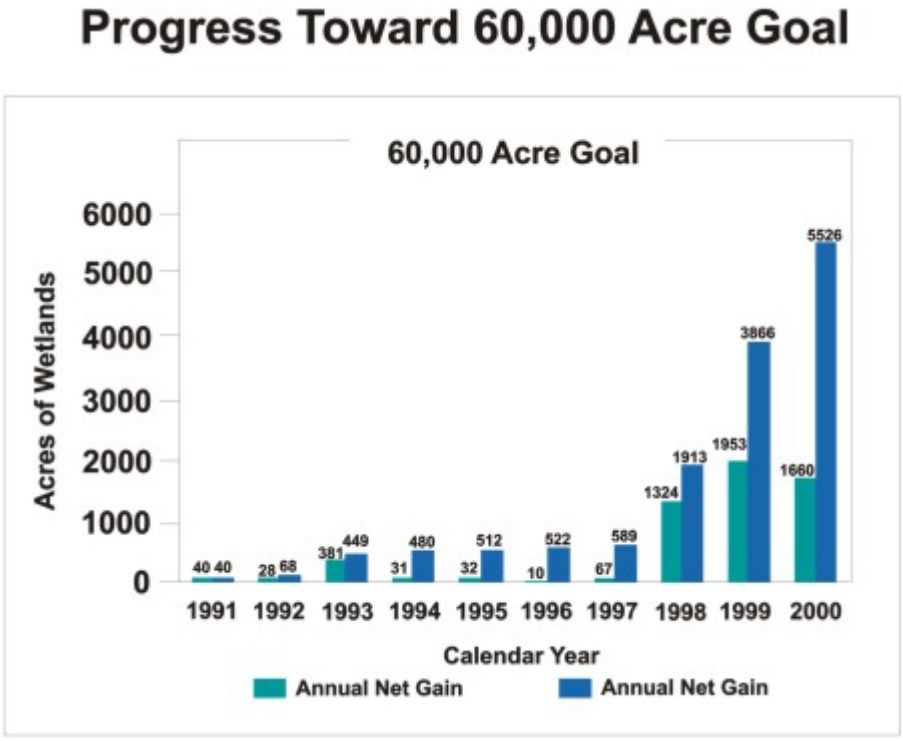
Another aspect of federal oversight is the Monitoring Committee, which consists of representatives from the Corps, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, National Marine Fisheries Service, MDE, DNR, and Maryland Historical Trust. Using quarterly reports that are submitted by MDE and other available information, this committee is responsible for evaluating the performance of the MDSPGP and refining its standard operating procedures.

The MDSPGP has been designed to reduce duplication and increase the efficiency of the State and federal regulatory program. The permit relies on the State regulatory process to provide wetlands protection for the majority of permit applications. In addition to eliminating State/federal duplication, the MDSPGP frees resources and enables the Corps to devote staff to currently neglected areas of wetland protection, such as jurisdictional determinations; wetland delineation verifications; advanced wetland identification; watershed planning and functional assessments; delineator certification; mitigation site selection, monitoring, and enforcement; aerial photography groundtruthing; and staff training and development.

Voluntary

Because there hadn't been significant resource gains, Governor Glendening's Wetland Restoration Initiative strengthens Maryland's policy of "no net loss" of wetlands by including a specific target to increase the State's wetland acreage base of approximately 600,000 acres by 10%, or 60,000 acres. This ambitious voluntary effort

is a commitment to create, restore, or enhance 60,000 acres of Maryland's wetland base to post-World War II levels. As a result of the Maryland restoration goal, Maryland serves as a model for developing feasible wetlands restoration strategies within the Chesapeake Bay Program framework. Following Maryland's lead, the recently signed 2000 Chesapeake Bay Agreement significantly advances wetlands protection and restoration. The Agreement calls for restoring 25,000 acres of wetlands by the year 2010, with Maryland's share being 15,000 acres. The Agreement also calls for an average restoration rate of 2,500 acres per year, basin-wide, after 2005. Maryland's share of this goal is 1,500 acres per year based on its share of historical wetlands losses.



In 1997, Governor Glendening appointed a steering committee of State, federal and local government agencies; and business, development, mining, agricultural and environmental interests to provide guidance on wetland restoration opportunities and advise on the development of the State Wetland Conservation Plan.

Wetland gains have already been realized under Governor Glendening's Wetland Restoration Initiative. Since its introduction in May of 1997, approximately 3,500 acres of wetlands have been restored Statewide. This trend should continue with the implementation of recommendations by the Wetlands Restoration Steering Committee ranging from tracking restoration projects to encouraging State and federal agencies to undertake restoration projects. For example, the Steering Committee is working with the State Highway Administration (SHA) to fund wetlands restoration activities through the federal government's Transportation Equity Act for the 21st Century (TEA-21). The Maryland SHA has targeted $500,000 per year for six years of TEA-21 funding toward wetlands projects. Because these federal funds must be matched by a local contribution, Maryland anticipates a $6 million investment in our green infrastructure.

"We're off to a great start thanks to the many partnerships developed between organizations like Ducks Unlimited, the Chesapeake Bay Foundation and many government agencies. However, we have a long way to go. We encourage property owners to contact the

Maryland Department of the Environment's Wetlands Restoration Program at (410) 631-8048 to obtain information about the benefits of wetlands restoration and the financial assistance programs available."

Erin Fitzsimmons, Chair, Governor's Wetlands Restoration Steering Committee.

Wetlands Restoration Highlights include:

- Worcester County's Soil Conservation District's activities with many landowners to design wetlands projects in both the Chesapeake Bay and Coastal Bay Watersheds. Through these projects, which were funded by the U.S. Department of Agriculture's Wetlands Reserve Program, Worcester County restored over 600 acres of wetlands.
- Howard County's Soil Conservation District's activities with the University of Maryland, the U.S. Department of Agriculture, the U.S. Fish and Wildlife Service, and the Department of Natural Resources to restore 17 acres of wetlands in the floodplain of the Middle Patuxent River.
- Baltimore County created 3.4 acres of wetlands in two highly urbanized areas of the County. These projects were designed to filter the pollutants in urban water runoff, create a habitat for wildlife, and provide a walking trail for the neighborhood.

Horsehead Wetlands, Grasonville, Maryland

The development of new outreach programs like the State's Landowner Stewardship Referral Service should also help move the initiative forward. This cooperative effort, between the Maryland Departments of Natural Resources, Environment, and Agriculture; the Maryland Environmental Trust; the U.S. Fish and Wildlife Service; the Natural Resources Conservation Service; the Chesapeake Bay Foundation; Ducks Unlimited; and the Wetlands Restoration Steering Committee, encourages stewardship programs on privately owned properties to restore critical habitats and to protect our waterways from pollutants. In addition, MDE's wetlands restoration program and the Department of Natural Resources' Rural Legacy Program work hand in hand. A

major focus of the Rural Legacy Program is to preserve large, contiguous tracts of land from sprawl development and to maximize efforts to conserve ecologically sensitive lands through cooperative efforts among State and local governments and land trusts. Restoring wetlands enhances the quality of preserved lands and those lands that are contiguous to these areas. All of these efforts are designed to ensure that our most environmentally valuable lands are protected.

What Challenges Does Maryland Face While Restoring Wetlands?

Smart Growth

Population growth, sprawl development patterns, and the desire of many citizens to live along the Chesapeake Bay, the Coastal Bays, and Maryland's rivers and streams create great pressure to fill wetlands. As a result of the attractiveness of these areas, and the high dollar value these lands bring, it is a challenge to provide the necessary incentives to encourage landowners to create wetlands themselves or to donate land for conversion to wetlands.

Days Cove, Gunpowder State Park

Regulatory

One of the major challenges facing MDE today is to look beyond the boundaries of its environmental programs to local and federal government authorities and to develop partnerships that take advantage of similar regulatory requirements. The goal of these partnerships is not only to establish a streamlined regulatory process that eliminates duplicative government actions, but also to continue a strong commitment to resource protection, conservation and management.

Another challenge is to establish mechanisms to enhance customer service. One of the most effective methods implemented to date has been pre-application meetings, which enable MDE staff to review projects during the planning stages in cooperation with local governments. Using this strategy, all regulatory requirements can be identified, and an environmentally sensitive project can be designed that complies with both State statutes and local ordinances.

Other regulatory challenges facing MDE include:

- Advanced identification of sensitive resources. This information would enhance resource protection when included in a County's comprehensive planning process and land use decisions.
- Maximization of both environmental protection for the State and profits for the business community.
    - Identification of suitable mitigation sites. Recent site investigations for the Potomac River and Patuxent River watersheds have revealed a dearth of suitable wetland creation sites.

Voluntary

Perhaps the biggest challenge is to achieve the Governor's Wetland Restoration Initiative, which strengthens Maryland's policy of "no net loss" of wetlands by including a specific target to increase the State's wetland acreage base by 60,000 acres. Several issues relating to this challenge include the development of

1) incentives for landowners to voluntarily create or restore wetlands;
2) incentives for citizens to donate land or easements for natural resource preservation, which may also include opportunities for wetland creation or restoration;
3) strategies to enhance interagency coordination and cooperation;
4) links between the owners of potential wetlands sites with the technical assistance and funding programs available to restore wetlands; and
5) programs to educate private, non-profit, and government landowners about the ecological value of wetlands.

Horsehead Wetlands, Grasonville, Maryland

Other challenges

A Natural Resources Damage Assessment (NRDA) is being conducted as a follow-up to the Pepco Oil Spill (see the Challenges section of Goal #4). The primary goal of the Assessment is to quantify impacts to natural resources and make recommendations for compensation. The NRDA is being conducted jointly by trustees from the Maryland Department of the Environment, Maryland Department of Natural Resources, U.S. Fish and Wildlife Service, and National Oceanic and Atmospheric Administration - National Marine Fisheries Service . On-going assessments include studies of terrapin, benthics, furbearers, osprey and herons, shellfish and fish, and wetlands. MDE is working directly on the Wetlands Assessment Team and assisting in many of the other studies. The wetlands assessment team has developed data quantifying the initial impacts. Further studies will quantify when resources return to" before spill levels".

Goal 8

Ensuring the Air is Safe to Breathe

Ensuring the air is safe to breathe for all who live in and visit Maryland is a primary goal of the Maryland Department of the Environment. Clean air is particularly needed for individuals who are most at risk, such as the elderly, the young, and those with respiratory ailments. In addition, clean air is needed to protect ecosystems, like the Chesapeake Bay, and to reduce the health risks to those whose subsistence depends directly on those ecosystems.

Air pollution contributes to illnesses, including cancer, detrimentally affects respiratory and reproductive systems and can cause mental impairment. In addition, air pollution can reduce visibility, damage crops, forests and buildings, and acidify lakes and streams. Ground-level ozone is Maryland's most significant air pollution problem. If high concentrations of ground-level ozone continue to occur, the many thousands of Marylanders who suffer from asthma will continue to be exposed to air that can aggravate their illness. Many others will experience short-term reduced lung capacity, which can cause them to modify or forego certain daily activities. Even others may experience respiratory discomfort due to exposure to ozone.

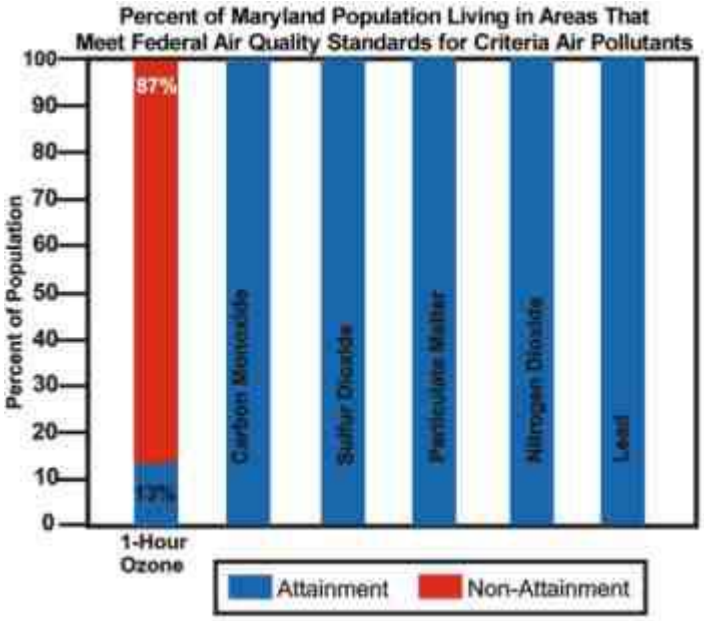


Figure 8.1

Is Maryland's Air Safe to Breathe?
Where is Maryland Now Compared to 10 Years Ago?

The overall air quality of Maryland is good. The federal government has established public health-based ambient air quality standards for six pollutants: ozone (ground-level), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), lead, and particulate matter. Maryland's air quality complies with all standards except ozone: the air quality in parts of Maryland, generally the Baltimore and Washington metropolitan areas and Cecil County, occasionally fails to meet the ozone standard between May and September of each year. As Figure 8.1 shows, more than 85% of the population of Maryland reside in these areas.

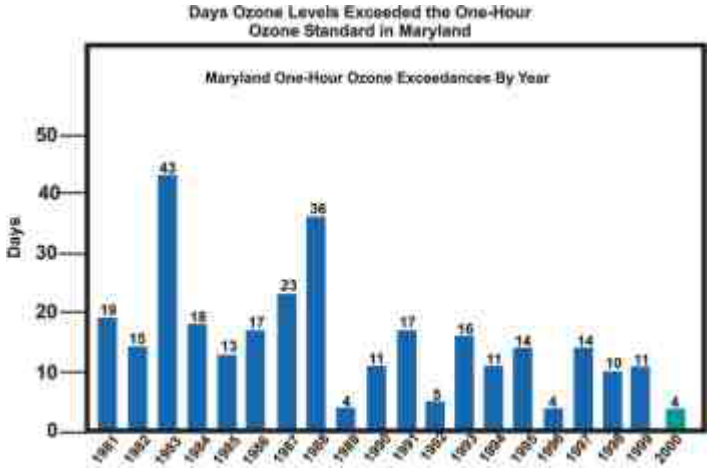


Figure 8.2

For a number of days each summer, including eleven days in 1999 and four in 2000, pollutant levels in Maryland exceeded the national standard for ground-level ozone or smog. The good news is that the air is getting cleaner. The average number of days that the national ground-level ozone standard was exceeded each year during the period 1981-1990 was twenty, whereas the average number of days for the period 1991-2000 was eleven. (Figure 8.2) There is also an improvement relative to the magnitude of an exceedance.

Air Quality Progress From 1988 to 1999

As Figure 8.3 shows, the maximum ground-level ozone exceedance value in 1988 was approximately 175% of the federal standard. A decade later, the maximum exceedance value fell to slightly over 125% of the standard. Moreover, the maximum exceedance value in 2000 declined even further to 117% of the standard. Figure 8.3 also shows that, based on reductions in carbon monoxide levels, which were attributable to improvements in automobile engines and fuels and improved vehicle maintenance as a result of the implementation of the Vehicle Emissions Inspection Program, Maryland's air quality now meets federal standards for all pollutants except ground-level ozone.

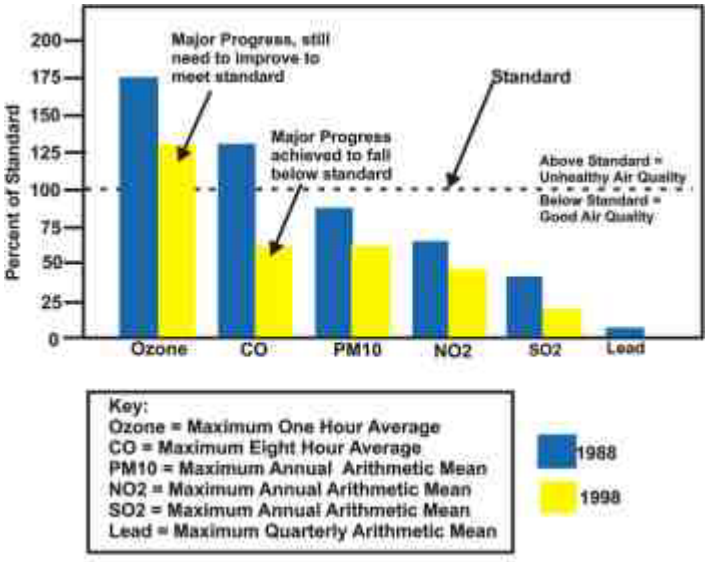


Figure 8.3

Aside from the six pollutants mentioned above, the air we breathe contains varying concentrations of toxic pollutants, such as benzene, mercury and other metals, acid gases and many other such pollutants. Although there are no ambient air quality standards established for toxic air pollutants, breathing and otherwise being exposed to air containing such pollutants can cause adverse health effects, both short and long-term, depending upon the exposure levels and the toxicity of the pollutant. The United States

Environmental Protection Agency (EPA) is in the process of estimating ambient concentrations for 33 toxic air pollutants and assessing the risk to public health associated with such concentrations for all counties across the United States. Based on information developed earlier by the EPA, this most recent assessment may show that several pollutants pose an increased cancer risk to persons residing in major metropolitan areas.

New Ozone and Particulate Matter Standards

Ozone is a colorless, odorless gas formed when sunlight mixes with nitrogen oxides (NOx) and volatile organic compounds (VOCs). During ozone violation days, the high concentration of ground-level ozone may cause inflammation and irritation of the respiratory tract. Vulnerable individuals include the young, the elderly, and those with pre-existing respiratory (lung) problems. Even healthy adults who perform heavy physical activity or manual labor outdoors experience the unhealthful effects of ozone. In addition, NOx adversely impacts the health of the Chesapeake Bay. Watershed models estimate that 25% of the total nitrogen pollution affecting the Chesapeake Bay comes from atmospheric deposition.

The federal Clean Air Act requires EPA to periodically evaluate ambient air quality standards to see if the standards remain adequate to protect public health. Under this process, the EPA issued new standards in 1997 for ozone and particulate matter. One involves a more stringent eight-hour ozone standard to replace the existing one-hour standard. Replacing the existing standard was believed warranted by EPA after review of the most recent scientific evidence. In their review, EPA concluded that adverse health effects, such as respiratory irritation, asthma, and decreased lung capacity occur at levels below the current standard and that exposure for longer than one hour is of concern. A second new standard issued by EPA addressed fine particulate matter. Fine particulate matter is defined as particles having a diameter size less that 2.5 microns. Particles of this size can be inhaled or are inhaled deeply into the lungs where they can contribute to adverse health effects, such as decreased lung functions, premature deaths, and aggravated cardiopulmonary disease. These new standards are under legal challenge and the matter has reached the U.S. Supreme Court.

Despite the challenge to the standards, EPA is requiring states to begin monitoring the levels of fine particulate and to continue to measure ozone levels in the air to establish the boundaries for areas that are able to achieve compliance with the new standards. Fine particulate monitoring was initiated in late 1999 in Maryland. A decision on which areas of the State will be able to meet the new standard will be made after three years of data are available. Regarding the eight-hour ozone standard, data from the past several years have been reviewed and ozone-compliant areas are being established. It is expected that some urban areas within Maryland will be unable to achieve compliance with the fine particulate standard. It is anticipated that all areas currently covered by the one-hour ozone standard will be in non-compliance with the eight-hour standard. Should the new standards be upheld, Maryland will be required to develop pollution reduction strategies that will help any non-compliant areas meet the new standards. It is expected that many of the programs currently underway locally, regionally, and nationally to address the one-hour standard will provide significant benefits in addressing the new eight-hour ozone and fine particulate standards.

What Actions Is Maryland Taking?

As Figure 8.4 shows, several different source categories contribute emissions of VOC and NOx (the two pollutants that contribute to smog formation) to the atmosphere. If Maryland is to be successful in addressing its ozone problem, reductions in emissions from all source categories are needed. As such, efforts are well underway to reduce emissions from electric utilities, major manufacturing plants, automobiles, non-road vehicles, household products, paints, fuels, small businesses (such as printers), aircraft, and gas-powered tools. Special emphasis is also being placed on transportation projects to ensure that such projects do not negatively affect Maryland's ability to achieve compliance with federal air quality standards. Because ozone can be transported into and out of Maryland, Maryland is participating in efforts that are aimed at reducing VOC and NOx emissions regionally.

Smart Growth

MDE promotes Smart Growth by carefully evaluating proposals for transportation and business growth in areas that are in non-attainment for ground-level ozone. The construction of major new roads can have a significant impact on air quality by increasing the amount of miles people travel on Maryland roads and by increasing congestion. Both activities result in increased pollution. To prevent this from occurring, mobile source emission budgets are developed with the Maryland Department of Transportation (MDOT) and local governments. Transportation projects for an area must comply with these budgets to receive federal transportation funds. MDE and MDOT encourages growth projects that encourage the use of mass transit.

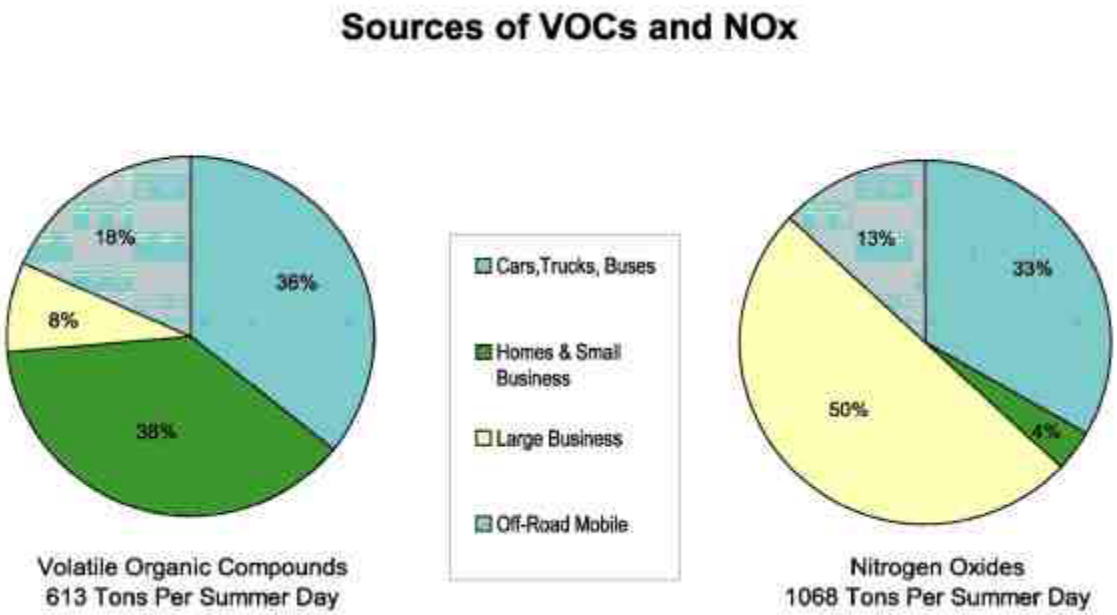


Figure 8.4

Transportation-related Measures

Given that the transportation sector is a large contributor of emissions that cause the formationof smog, a sizeable number of emission reduction measures are aimed at this sector. Carpooling,the use of High Occupancy Vehicle lanes, live-near-your-work programs, and programs thatpromote the use of mass transit help

reduce "vehicle miles traveled" (VMTs). This is vitally important to the clean air effort for, as Figure 1.5 shows, a significant increase in VMTs has occurred since 1970, and a further increase is projected for the foreseeable future. Increases in VMTs can offset environmental gains achieved through other pollution reduction measures, such as advances in engine or fuel technology that bring about improved performance and reduced emissions. The use of vehicles fueled by natural gas or electricity, cleaner automobiles, truck and off-road engines, and cleaner fuels also can help.

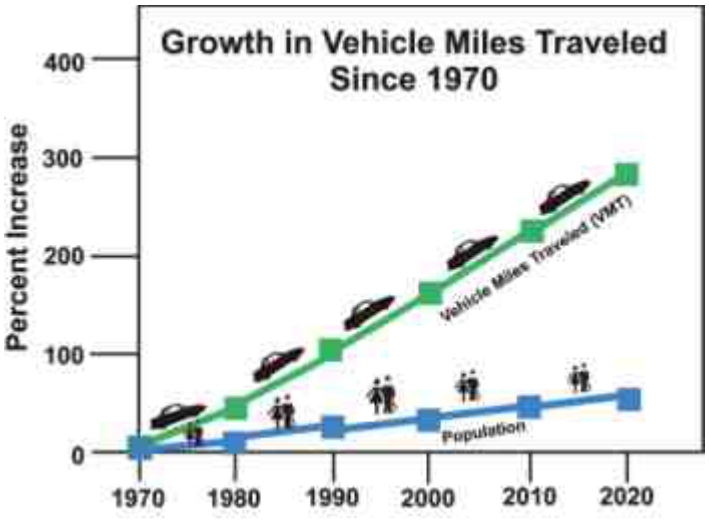


Figure 8.5

Increased impacts on air quality, especially urban sprawl (e.g., transportation choices which favor single occupant automobile trips), presents a huge challenge to achieving our clean air goals.

The Enhanced Vehicle Emissions Inspection Program

Maryland operates a vehicle emissions inspection program that measures a vehicle's overall pollution output and requires repairs to be made when prescribed emission limits are not met. This program is very effective at reducing pollution. It is estimated that 71 tons (41 VOC and 30 NOx) of pollutants per day will be reduced as a result of repairs that are made under this program when all aspects of the program are in place. Cars are tested every two years on a dynomometer at a cost of $14 to the vehicle owner. (The dynomometer simulates driving over a range of operations, including highway, stop-and-go, and idling. The dynomometer test was initiated in October 1997. Prior to that, an idle test was conducted. The idle test was not as accurate as the dynomometer test and it did not measure NOx emissions). Vehicle emissions are measured as the test proceeds. A vehicle that fails the test must make repairs and be re-tested until it passes. A waiver from further re-testing can be granted if an owner demonstrates that they have spent $450 in repairs (lower amount for older vehicles until 1/1/02) to meet the performance standards. Test data have shown that when repairs are made, the average emission reduction for NOx and VOCs has been about 70% each. Additional test procedures, such as a gas cap pressure test, are scheduled for implementation in 2001. Approximately 2.3 million cars and light-duty trucks were tested during the first two-year cycle. Of these, about 8% failed the initial test and needed to be repaired.

Cleaner fuels and cleaner car emissions

EPA has mandated cleaner fuels and cleaner car emissions. Aside from just the inherent benefit of generating less pollutants when burned, cleaner fuels are key to lowering overall vehicle emissions. Without such fuels, the catalytic converters used in today's vehicles to reduce pollution would become significantly less effective. Cleaner gasoline and diesel engines are being developed on a national scale. Through improved technology, newer cars and trucks emit less VOCs and NOx than those of earlier model years, and further improvements in engine design, which will mean a further lowering of emissions, are mandated to begin nationally in 2004 for cars and 2007 for trucks. Cleaner fuels, both gasoline and diesel, when coupled with dramatic improvements in engine design, provide a significant pollution reduction benefit. Maryland's activities in the fuel and emissions arenas are limited to updating its fuel standard regulations to capture the federal mandates for fuel sold in Maryland and to adjust emission testing cut points to match mandated emission levels.

Honda makes this gasoline/electric hybrid car. It gets 62 miles per gallon in the city and 70 miles per gallon on the highway.

Diesel Emission Reduction Activities

Diesel engines currently in use are a significant and growing concern, as these engines emit excessive levels of smoke when not properly maintained or operated. Diesel vehicles contribute to air pollution, most notably through emissions of NOx and fine particulate matter. Diesel smoke particles are small enough to be easily inhaled deep into the lungs where tissue damage may occur. In addition, some of the chemicals present in diesel exhaust have been determined to cause cancer.

To address this issue, Maryland (in 2000) and several other states have initiated roadside diesel emissions enforcement programs. Under Maryland's innovative program, both in-state and out-of-state diesel trucks and buses are tested for compliance against an opacity (smoke level) standard. At roadside locations, such as weigh stations, trucks that are observed to be emitting smoke are targeted for testing. Any vehicle that fails the test is required to later demonstrate compliance, or the owner is subject to a fine of up to $1,000. For vehicles registered in Maryland, the owner also faces a possible suspension of the vehicle's registration.

Photo on left: Roadside Diesel Emissions Test

Through advancements in engine technology, new diesel vehicles are getting cleaner. Also, new tailpipe emission standards that go into effect in 2007 will require heavy-duty truck and bus engine manufacturers to produce even cleaner engines. Furthermore, the EPA has proposed a rule requiring refineries to produce diesel fuels, by 2006, that are 97% lower in sulfur than current fuels to bring about pollution reductions in both newer and older engines.

Permitting and Compliance

MDE continues to implement its permit and inspection programs to ensure that manufacturers and businesses meet air pollution control requirements. Appropriate enforcement action is taken in cases of non-compliance. There are approximately 10,000 stationary sources of air emissions registered in Maryland. The Air Quality Compliance Program is responsible for ensuring that these sources comply with applicable air pollution control requirements. Approximately 200 of these sources emit more than 95% of all the pollutants emitted from stationary sources. These 200 sources and an additional 400 priority sources are the primary focus of this program. The additional priority sources are selected based on a variety of factors, such as the amount and nature of emissions, the level of toxic air pollutant emissions, the potential for nuisance impact, and the potential for significant risk to public health or the environment. The Department is also conducting inspections at small sources of air pollution that, as a group, account for significant emissions, such as drycleaning establishments, gasoline stations, and small printing firms. In FY 2000, MDE conducted approximately 3,200 inspections at nearly 1,500 sites and determined that the compliance rate was greater than 98%.

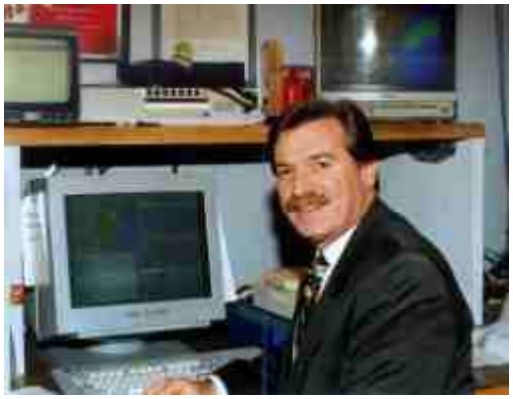
MDE issues nearly 800 construction permits each year for projects that emit pollutants into the air. These projects are reviewed to ensure that emissions will not have a negative impact on air quality or public health. In addition to construction permits, an average of 100 operating permits are issued each year. These permits are issued for a period of five years and are issued to large or heavily controlled sources of air pollution, such as chemical and asphalt plants, cement manufacturers, and power plants. Operating permits contain monitoring, recordkeeping, and reporting requirements to ensure that, once a facility is built, it operates within its design parameters. To allow MDE to focus more attention on those facilities that have the greatest potential for harm, general construction permits have been established for certain categories of small sources. General permits cover a class of sources, such as drycleaners, and contain identical conditions for each source within the class. General permits allow for quick permitting without loss of environmental protection. About 300 of the 800 construction permits issued each year are general permits.

Cross Boundary Air Pollution

Pollution from certain major sources upwind of Maryland contributes to Maryland's ozone problem. Other states face the same problem. To address this, Maryland is cooperating with the member states of the Ozone Transport Region (East Coast from Maine to Virginia) to reduce pollutants that are generated in the Region but transported across state boundaries. One such effort is focused on reducing NOx emissions from large sources with tall stacks, because emissions from such sources are more likely to be transported great distances. Also, Maryland has petitioned the EPA to require upwind sources to reduce the amount of pollutants emitted. In addition, Maryland has joined the EPA and the State of New York in a lawsuit against American Electric Power, a mid-western utility that generate emissions affecting Maryland, over the utility's avoidance of a Clean Air Act requirement to install pollution control equipment to reduce NOx emissions. Maryland has also moved ahead to require major NOx sources in Maryland to meet strict pollution control standards in advance of similar federal standards that are the subject of a legal challenge.

Ozone Pollution Map and Ozone Forecasting

Because everyday activities such as refueling and mowing the lawn exacerbate the pollution problem in Maryland, the Department has made a substantial effort to educate the public on ground-level ozone and its health effects. To educate the public about ozone, Maryland and the American Lung Association jointly developed an ozone pollution map that shows real-time ozone levels across the State. Maryland's map was the first of its kind in the nation. Maryland and Washington, D.C. television stations use the map as part of their summertime weather forecasts. Ozone maps will be used in 32 states this year. Maryland's mapping activities have achieved semi-finalist status in a national competition under Harvard University's *"Innovations in American Government"* program.



Channel 13 Weatherman Bob Turk

In addition, MDE forecasts ground-level ozone concentrations and provides health advisories to the public when concentrations are forecasted to be at unhealthy levels. The forecasts and advisories are broadcast to the public by local television and radio stations, and the information is available on MDE's web site, www.mde.state.md.us/ARMA, and through an Air Quality Hotline (410-631-3247). In 2001, two enhancements are planned. The first is to provide real-time ozone levels on MDE's web site so that the public can directly see whether air quality is approaching or is at unhealthy levels for various areas around the State. The second is to establish an e-mail-based advisory system. This system would allow citizens to register with MDE and be notified via e-mail when air quality reaches a particular level.

Ozone Action Days

Maryland conducts the Ozone Action Days Program, an awareness campaign that educates individuals and organizations about the health effects from ozone and the role that voluntary activities can play in this regard.

The program encourages citizens, governments, and businesses to reduce air pollution from activities such as personal driving and lawn care during high ozone days. Over 350 businesses or organizations have participated in the program by becoming Ozone Action Day partners. Partners educate their employees about ozone pollution and its effects, and partners are notified by MDE when pollution levels are forecasted to approach unhealthy levels. When notified, the partners voluntarily institute various measures to curtail emissions of pollutants that can cause ozone to form. Some partners shift their work to evening hours. Others postpone painting and lawn maintenance, allow their employees to telecommute, offer incentives for carpooling, and prohibit company fuel pumps from being used during the daytime hours. Citizens can help lower ozone levels by mowing lawns at night, postponing painting until ozone levels are lower, refueling after dusk, limiting driving, participating in carpooling, and avoiding gasoline spills when fueling. The Ozone Pollution Map and Ozone Action Days programs are cornerstones of the Department’s efforts to increase pollution prevention activities by ordinary citizens and promote environmental education and awareness.

"We want every citizen to understand the health issues caused by air pollution," **says Bill Burroughs, the Clean Air Partnership's** Managing Director. "It's important that citizens know to limit outdoor activity when air quality reaches unhealthy standards."

How Does Maryland Compare to Other States?

The entire state of Maryland is included in the Ozone Transport Region, which is an area from Virginia to Maine that is affected by ozone transport. Portions of Maryland and the other states in this region are not in attainment with the one-hour ozone standard. Comparing the number of days each state's air quality exceeds the federal ozone standard during the ozone season is one benchmark for how well a state is performing relative to others. Unfortunately, Maryland has ranked at or very near the top of the scale over the past several years in the number of exceedance days among the states in the Ozone Transport Region. Figure 8.6, entitled "Ozone Exceedances in the Northeast - 1999" shows the performance of the states in the Ozone Transport Region for 1999. This is why Maryland must remain aggressive in its efforts to reduce ozone.

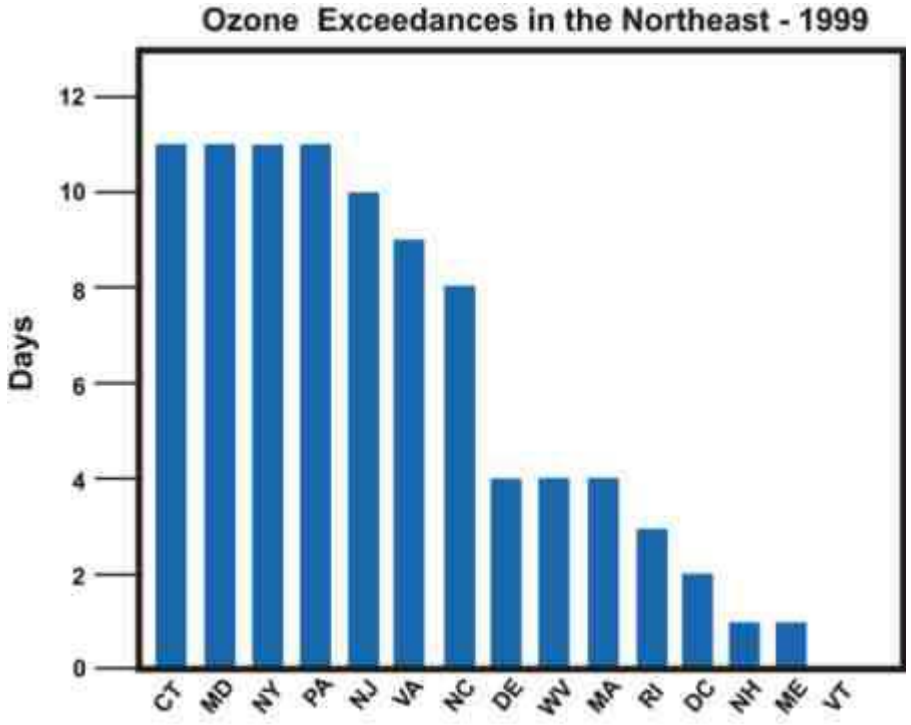


Figure 8.6

What Challenges Does Maryland Face?

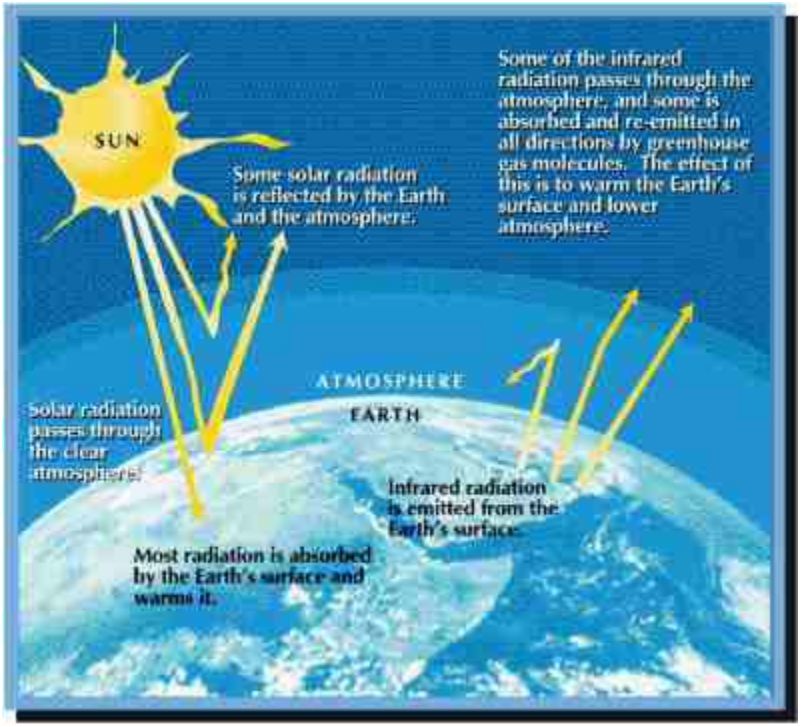
Smart Growth

While tough federal and State emission standards for new vehicles and the new inspection and maintenance program for existing vehicles have dramatically reduced air pollution, sprawl development patterns force us to drive farther and farther, canceling out much of the gains.

Increased impacts on air quality, especially from urban sprawl (e.g., transportation choices which favor single occupant automobile trips), present a huge challenge for achieving our clean air goals. This challenge, as illustrated in the Figure 8.5 on page 12, shows that while Maryland's population has increased gradually and is projected to continue to gradually increase, there has been and will continue to be a dramatic increase in vehicle miles traveled (VMT) over the period studied. The challenge will be to implement existing growth-controlling programs and develop new ones that will also serve to reduce VMT growth. Increased carpooling, better and more expansive mass transit systems, live-near-your-work type programs, using existing infrastructure and being creative in building communities that support the ideals of reduced travel are all examples of efforts that can help reduce VMTs and, therefore, reduce pollution.

Climate Change

Climate change is a major challenge for the future both nationally and internationally. The problem stems from the fact that carbon dioxide, methane and certain other "greenhouse" gases in the upper atmosphere trap heat from the sun and create a natural greenhouse effect that causes a gradual rise in the Earth's temperature and affects global climate. Since the early 1970's, the Earth's average surface air temperature has increased rapidly. Many scientists fear that this warming is the result of human activities that produce excessive levels of greenhouse gases. These scientists predict that if emissions of greenhouse gases are not seriously curtailed, there will be significant and harmful effects. Some of these predictions include rising sea levels, a northerly shift in agricultural regions, an increase in the severity of major weather events, and increased droughts and heat spells in certain regions. Carbon dioxide is the major greenhouse gas. Levels of this gas have been rising steadily since the Industrial Revolution, principally through human use of fossil fuels (coal, oil and natural gas), and have risen more dramatically over the past 40 years. Aside from the use of fossil fuels, deforestation contributed to the rise in carbon dioxide levels. Since forests and other vegetated areas have the ability to remove carbon dioxide from the atmosphere via photosynthesis, destroying large expanses of these areas reduces the Earth's ability to naturally absorb carbon dioxide.



In recognizing the effect our local activities can have on the global greenhouse problem, MDE and several other State agencies have measures in place to help curb the release of greenhouse gases and are considering additional actions to further the effort. For example, MDE is reducing greenhouse gas emissions through the implementation of pollution control programs designed to reduce ozone precursor emissions, such as the Vehicle Emissions and Inspection Program and various programs to reduce emissions from the utility and manufacturing industries. Also, MDE is finalizing an inventory of greenhouse gas sources for use in defining additional control measures that could produce meaningful and cost-effective greenhouse gas reductions. In addition, The Maryland Energy Administration (MEA) administers the Maryland Clean Energy Incentive Act, which provides tax credits or exemptions for specified energy-efficient appliances, air conditioners,

Figure 8.7

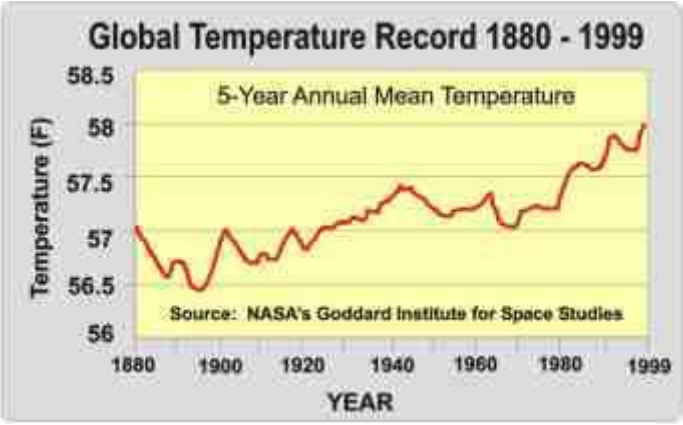


Figure 8.8

home solar electricity devices, electric vehicle, fuel cell technologies, and renewable energy. Also, MEA's Maryland Solar Roofs Program facilitates the installation of 20,000 photovoltaic systems in Maryland by 2010. Much more will be needed in the future both locally and globally. How much more will depend upon the outcome of ongoing debate that is occurring at the national and international level.

Tips to Ensure the Air is Safe to Breathe and to Reduce Global Warming

- Car pool, vanpool, use mass transit, telework, bike, or walk when possible. Cars are the largest sources of air pollution in most urban areas of Maryland. When you do use your car, plan ahead and combine trips and errands. If you are buying a new car, choose a fuel efficient and low emissions model.
- Live near your work.
- Properly maintain your vehicle and keep tires properly inflated.
- Limit idling when possible, avoid quick starts, and drive within the speed limit.
- Refuel cars after 6:00 PM to limit daytime pollution releases, and don't top off your tank.
- Keep lawn equipment and boats properly tuned. Do not use lawn mowers and other gas-powered lawn tools on Ozone Action Days, or use electric tools instead.
- Use electric or natural gas grills instead of charcoal and lighter fluids.
- Use environmentally-safe paints and cleaning products. Delay use of oil-based paints until after 6:00 PM or after smog season.
- Conserve energy and turn off lights when you aren't using them. Set air conditioners to 78 degrees or higher or use a fan whenever possible.
- When buying a new appliance, buy one that is energy efficient.
- Remember, most of the energy we use comes from the burning of fuel - the more energy-efficient we are, the less we pollute.

Goal 9

Providing Excellent Customer Service to Achieve Environmental Protection

While working to protect public health and the environment in Maryland, MDE recognizes that the need for excellent customer service extends far beyond the mere implementation and execution of individual programs. As stated in our mission statement, the Department is committed to providing excellent customer service and enhanced programs to all of the Department's stakeholders in order to achieve Maryland's environmental goals while also supporting economic development and Smart Growth.

E-Government

MDE has continued to increase the information and services available through the Internet and electronically. Via the Internet, customers can download MDE permit applications and instructions, submit information to the Department electronically, view the status of certain permit applications, and make Public Information Act (PIA) requests. This same PIA system improves the business process by reducing the level of effort required to satisfy requests, improves the tracking of requests, and documents the expenses incurred to satisfy requests.

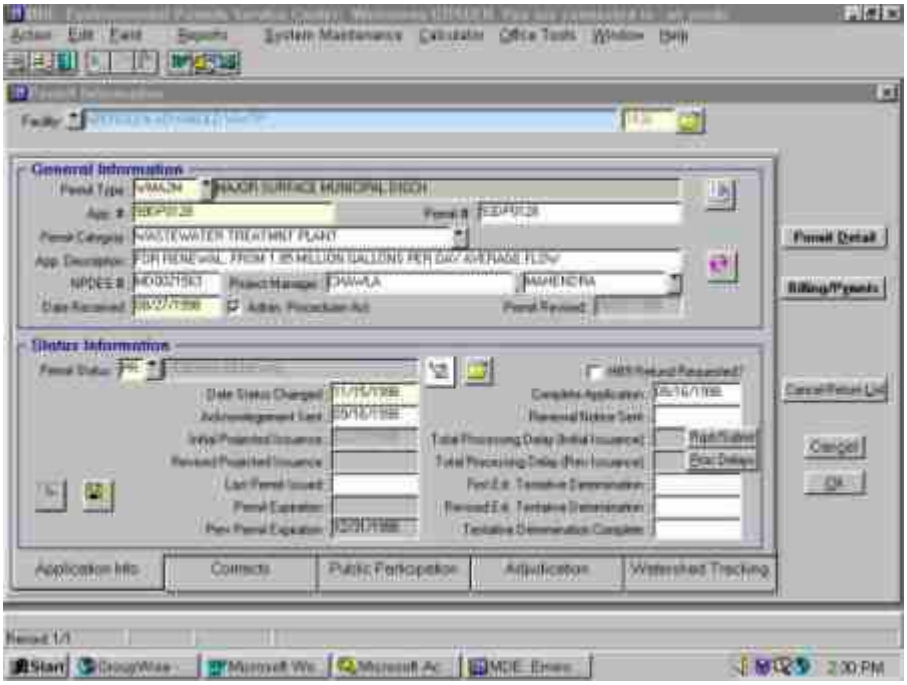


Figure 9.1

In April 2000, the Maryland General Assembly passed the e-Government services legislation for the State of Maryland. This landmark legislation, sponsored by Governor Glendening, will provide electronic access to most Maryland government services via the Internet by 2004. The law requires that agencies have 50% of their services on-line by 2002; 65% by 2003; and 80% by 2004.

To meet the e-services goal, MDE has been focusing on developing a proof-of-concept model (a prototype software system that MDE's Solid Waste Program is piloting) to demonstrate the feasibility of an electronic data information system. This system, called the Enterprise Environmental Management System, will support the core business functions of permitting, compliance, and enforcement across the different environmental media, while operating from a single, consolidated database. (Figure 9.1 - a sample permit screen) The Enterprise System will enable the Department to standardize multiple processes that were once thought to be unique, and as a result, maximize the potential of the Department to meet its mission. To assist with the development cost, MDE has received a grant from the EPA under their One-Stop Program toward the development of the proof-of-concept model.

MDE's goal is to have the Enterprise System fully implemented by the end of FY 2003. Then the citizens of the State and other stakeholders will benefit from on-line permit applications; data submission for compliance reporting; permit and process status; and a single point of reference for environmental information. MDE will benefit through the streamlining of processes; a reduction in the maintenance requirements necessary to support a consolidated system verses multiple systems; improved data quality and management of data by inspectors and their supervisors; streamlining of and the ability to evaluate alternatives to reporting through EPA's national database systems; and reductions in the effort necessary to report on the status of the environment. To further this effort, MDE is working with both other States and Environmental Protection Agency (EPA) on the National Environmental Information Exchange Network which is an collaborative e-government initiative to improve environmental reporting. For more information, please contact the Office of Information Technology at 410-631-3692.

Environmental Customer Services

The Department is committed to providing quality environmental customer services to its stakeholders to more effectively achieve Maryland's public health and environmental protection goals. Examples of environmental customer services offered by the Department to its stakeholders are as follows:

Environmental Permit Service Center (EPSC)

MDE established the Environmental Permit Service Center (EPSC) in 1994 to provide a "One-Stop Shop" for permit information. The EPSC serves as an initial point of contact at MDE for persons seeking or inquiring about environmental permits; and as a clearinghouse for information on permitting, small business assistance and pollution prevention. EPSC helps its customers identify, understand and comply with regulatory requirements that apply to their projects. When a project involves multiple permits, EPSC arranges consultative meetings between the customer and appropriate MDE permitting programs. The EPSC coordinated 11 multimedia permitting meetings in FY 2000, most of which were to assist businesses wishing to locate in Maryland or to expand their Maryland operations. In these meetings, the applicant is provided personal consultation on how best to proceed to obtain necessary permits. Options available to reduce regulatory burden and suggestions to reduce permit-processing time are often provided. For example, pollution prevention initiatives, use of alternative materials, and storage methods that do not require a permit, can be suggested. Suggestions are made to optimize the timing of permit application preparation and submittal, to enhance coordination between MDE administrations, and to minimize delays. In addition to these meetings, EPSC assists the media (air, water, waste) administrations with pre-application meetings with permittees to discuss the permitting process. For more information, please contact the EPSC at (410) 631-EPSC (3772).

Pollution Prevention

Maryland businesses receive valuable customer service from MDE in the form of pollution prevention and

compliance assistance. Pollution prevention promotes the reduction of pollution at its source and is considered by MDE as the preferred approach to environmental protection. The concept of preventing pollution at the "beginning of the pipe" as opposed to regulating the pollution at the "end of the pipe" can also be a more efficient and cost-effective approach for businesses.

"Pollution prevention is not only necessary to improve shareholders return, but it can help in developing new and innovative technologies that improve performance, have fewer environmental burdens, and improve resource utilization."

Curt Elliot, Environmental Manager for Proctor & Gamble Cosmetics Hunt Valley Plant.

"Businesses for the Bay provides organizations the recognition they deserve for making changes in their day-to-day operations which can collectively have a major impact on the Chesapeake Bay and its rivers."

Kelly Mecum, Business for the Bay Coordinator, Chesapeake Bay Program.

Maryland Businesses for the Bay Participants

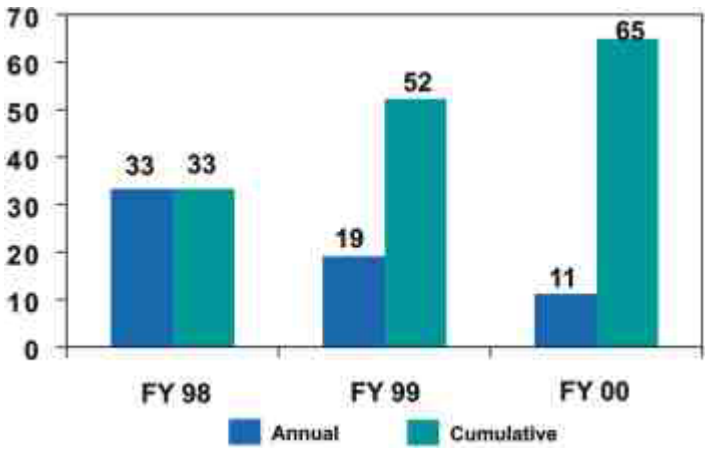


Figure 9.2

Pounds of Pollution Prevented

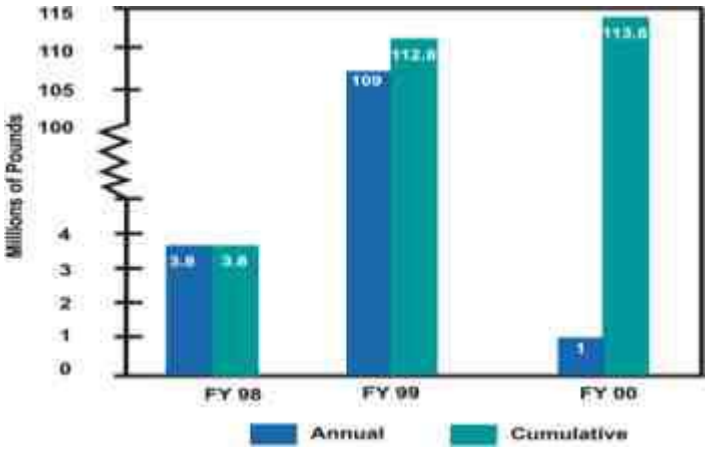


Figure 9.3

Dollars Saved Through

Pollution Prevention Measures

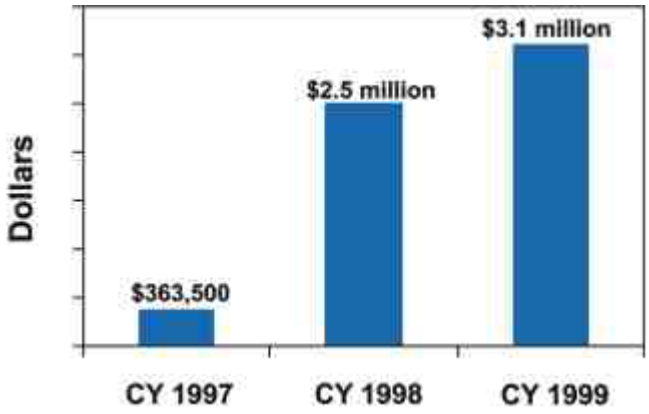


Figure 9.4

Maryland, along with neighboring Chesapeake Bay states, supports a voluntary pollution prevention program called Businesses for the Bay. The program encourages businesses to take specific steps to prevent pollution and asks that participants report their pollution prevention progress in terms of dollars saved and pounds of pollution prevented each year (Figure 9.2 and 9.3). In FY 2000, the number of participating businesses increased from 52 to 65, representing a 25% increase over FY 1999 (Figure 9.4). The program acknowledges the efforts of businesses and encourages them to share their knowledge and experience with other companies through a business-to-business mentoring program. Participants are also encouraged to apply for annual awards recognizing small, medium, and large businesses. For more information, please contact the EPSC at 410-631-3772 or visit MDE's website at *www.mde.state.md.us*

Compliance Assistance

Compliance assistance is both a valuable customer service and an efficient, effective way to improve the environment. MDE provides compliance assistance to its regulated customers in two ways. The first is when an MDE inspector documents a specific past or current violation which the regulated entity corrects in the absence of a formal enforcement action; or documents a specific action which the regulated entity has the option of undertaking to prevent the likelihood of potential future violations, which action the regulated entity undertakes voluntarily and in a timely manner in the absence of a formal enforcement action. In FY 2000, MDE's Enforcement and Compliance Program rendered 15,831 of these types of compliance assistance activities. The second type of compliance assistance rendered by MDE involves public outreach and assistance activity to help the regulated community understand and comply with environmental laws. In FY 2000, MDE's Small Business Assistance Program assisted more than 200 small businesses with their compliance questions and the Pollution Prevention Program facilitated over 80 targeted pollution prevention activities. During this type of compliance assistance, the Department often provides pollution prevention and waste minimization information to businesses, explaining how businesses can save money and reduce environmental liabilities by changing their operations to avoid creating pollution.

Small Business Assistance Program

The Small Business Assistance Program initiated an outreach effort in FY 2000 to invite Maryland's metal finishers to join the Department in participating in EPA's national Metal Finishing Strategic Goals Program. The Department is committed to providing compliance and pollution prevention assistance to the metal finishers and the Publicly Owned Treatment Works (POTWs) that join the program. The program is voluntary, with participating firms committing to several goals that reduce the environmental impacts of their operations, such as: reducing hazardous emissions; increasing the percentage of material use; and reducing energy and water consumption. Participating firms should also save money from these steps. Five metal platers and one POTW have agreed to participate.

The Small Business Assistance Program also initiated a Small Business Loan Fund effective July 1, 1999. The program is designed to provide loans to small businesses for the upgrade or replacement of capital equipment needed to comply with air pollution regulations. Loans can be for a maximum of $50,000 and a maximum term of 15 years. The EPSC finalized the regulations for the program in December 1999 and launched a marketing effort for this program in February 2000. MDE works with the economic development community, trade associations, and others to publicize the program. Examples of the types of small businesses that could benefit from this program include, but are not limited to: dry cleaners, printers, service stations, small manufacturers, and body shops. In addition, MDE will identify key geographic sectors with significant concentrations of target businesses, such as Baltimore City, for focused public outreach. MDE plans to close at least five loans by the end of FY 2001. For more information, please contact the EPSC at (410) 631-3772.

Standard Permit Turnaround Time

In January 1998, the Department first published the Standard Turnaround/Review Times for each of the permits, licenses, and certifications that the Department issues. The goal of issuing more than 90 % of our environmental approvals within the standard review times was established for each environmental program. Both the standard review times and the 90% goal were developed with extensive input from the Department's stakeholders. In every year that MDE has tracked Permit Turnaround times, the Department exceeded the 90% goal. (Figure 9.4) In addition, more than 75% of the approvals were issued within 30 days. For more information, please contact the EPSC at 410-631-3772.

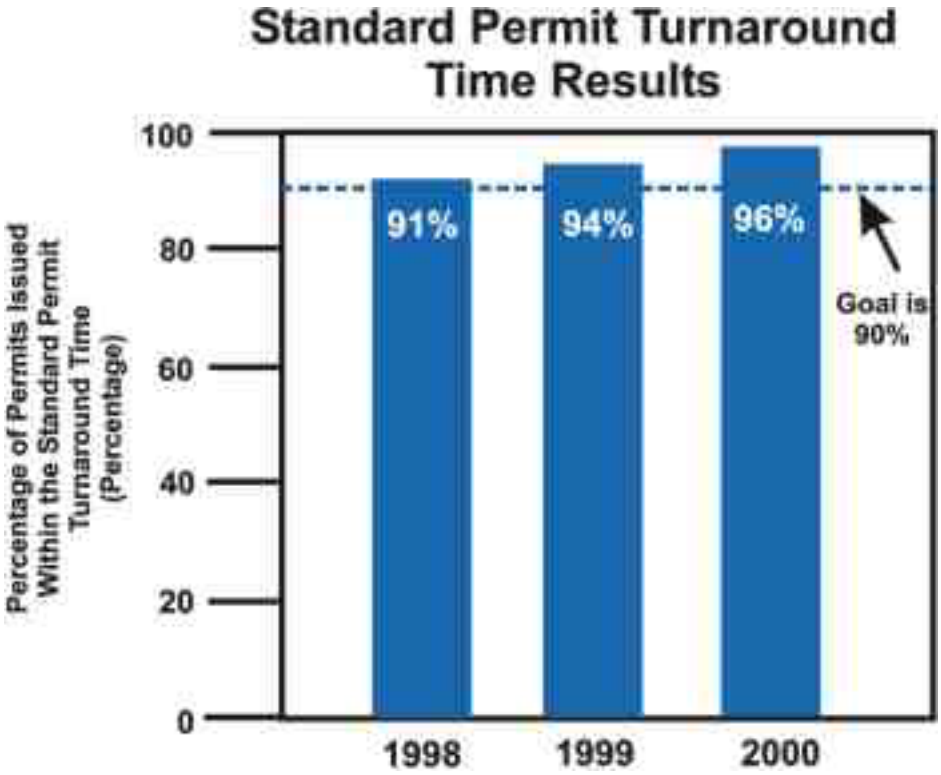


Figure 9.5

Regulatory Reform and Permit Streamlining

The Department is committed to achieving Maryland's public health and environmental protection goals in the most effective, efficient manner possible. Streamlining the permitting process and reforming regulations where appropriate will assist the Department in achieving its environmental and public health goals while fostering economic development. The Department continues to work closely with the Task Force on Regulatory Reform to ensure that Maryland's environmental programs and regulatory requirements are understood and to ensure that Task Force recommendations will enable the Department to more effectively achieve our mission.
The Department has made all of its permit applications and instructions for completing the applications available for reading and downloading through the Internet at MDE's web site. The permit applications and instructions are also linked to the Department's Business Guide to Environmental Permits and Approvals, which provides detailed information about each of MDE's permits, such as the purpose of the permit, the permit requirements, the permit application process, the standard turnaround time, the term of certification, the permit fee, and the Department contact for further information and assistance. Under the e-services goals, the Department is also working to enable businesses to submit permit applications via the Internet.

Education and Outreach Services

Exhibits

MDE conducts hundreds of outreach and educational events with staff, exhibits, and outreach materials to reach key audiences on a personal, face-to-face level. Major outreach events include the Maryland State Fair, the Baltimore Waterfront Festival, the Chamber of Commerce – Legislative Conference, the

Maryland Technology Showcase, the Maryland Home and Flower Show, the Homebuilders' Expo, and the Maryland Watermen's Association Festival; and the annual conferences of the Maryland Municipal League, Maryland Association of Counties, and the Maryland Association of Environmental and Outdoor Educators. MDE estimates that it reaches more than 30,000 people each year during these events. If you would like an exhibit at your event, please contact the Office of Communications at 410-631-3103.

Recycling exhibit at Homebuilders Expo at the Baltimore Convention Center

Smart Growth exhibit at Maryland Association of Counties' event in Ocean City, Maryland

Work with Educational Institutions

MDE is proud of its partnerships and voluntary environmental education efforts across Maryland. The Department works hard to get as much information into schools to help both early education initiatives as well as higher education initiatives. For example, MDE's Memorandum of Understanding with Morgan State University (MSU) has provided MDE staff as lecturers to students in the school of engineering. MDE personnel also attend meetings of MSU Environmental Task Force, an ad hoc group that includes representatives from MSU faculty and community based organizations. The Task Force, in addition to on campus environmental activities, also explores potential collaborative arrangements between the University, the local Community, MDE, the Department of Natural Resources, and the Department of Health and Mental Hygiene. In addition, MDE's recycling program has been working with MSU to establish of a comprehensive campus-wide recycling program.

MDEnvironment

MDE publishes a monthly newspaper, MDEnvironment, to inform our stakeholders, legislators, environmental organizations, and business organizations, and environmental educators, and the general public about the Department and the Department's activities. This publication, with a circulation over 8,000, is used to distribute information about MDE'S ongoing programs, new initiatives, and environmental news in Maryland. By listing all permit applications and enforcement actions by county, the MDEnvironment informs citizens about environmental issues in their community as well as across the State. In addition, the newspaper often contains articles designed to help the regulated community be better informed about obtaining required permits and help citizens and communities become more involved in their environment. To get on the MDEnvironment mailing list, please contact the Office of Communications at (410) 631-3103. MDEnvironment is also available on MDE's website at www.mde.state.md.us/mdenvironment/index.html

Public Access to Services

MDE is also committed to assuring public participation and stakeholder involvement in the Department's programs through numerous activities that encourage public participation and public responsibility in order to achieve Maryland's public health and environmental protection goals. It is important that stakeholders and customers have a voice in Maryland's government and how the Department achieves our mission.

Public Participation

Public participation in MDE Programs is a paramount goal of the Department and MDE is committed to providing extensive opportunities for public participation and involvement. From the development of environmental regulations, to recycling, to stream cleanups, to increasing the use of the Light Rail, our citizens have demonstrated a great capacity for active involvement resulting in a positive change in our State's environment. In addition, public involvement in the creation, implementation, and enforcement of environmental law has been a resource valued by the Department. To that end, MDE has established the following core values for public access:

- ensure that the citizens of this State have the opportunity to be our partners at the table;
- develop all programs with the full knowledge and input of our customers;
- conduct meetings and informational sessions at times and places that are accessible to the greatest number of participants;
- provide feedback to our stakeholders on public comments; and
- grant the public timely access to information and records at MDE.

Over the past three years, the Department, along with the Maryland Department of Natural Resources (DNR) and Region III of the US Environmental Protection Agency (EPA), has held more than 30 public meetings across the State to discuss Maryland's progress toward achieving its environmental goals.

During these meetings, citizens, local government officials and organization representatives provided comments and input to help shape Maryland's Environmental Indicators Report and the Environmental Performance Partnership Agreement between MDE, DNR, and EPA. The purpose of the environmental partnership between the three agencies is the development of a long-term, results-based management plan that will improve the effectiveness of Maryland's environmental programs. The FY 2000 Environmental Performance Partnership Agreement and Maryland's Environmental Indicators Report can be found on MDE's website at www.mde.state.md.us

"Maryland's Environmental Performance Partnership Public Participation Program has certainly been the best and the most comprehensive in our Region, if not the nation. The keys to this Program's excellence are MDE's commitment to keep the people of Maryland informed about their environment and the willingness to incorporate public comment into Department strategy."

Thomas C. Voltaggio, Deputy Regional Administrator, EPA Region III

Many of MDE's programs require public participation in the permitting process. The Department is committed to ensuring the widest possible opportunities to satisfy its public participation requirements. For example, in addition to official Public Hearings required under the Administrative Procedures Act for programs or projects with a potential for large impacts on the environment, the Department also encourages permittees to hold

similar meetings to improve communication and understanding with the neighboring community. MDE held more than 75 hearings and public meetings in FY 2000.
Prior to developing, proposing, and enforcing new regulations, MDE has a standard practice of creating internal and external workgroups consisting of concerned citizens, elected officials, representatives of government agencies, and representatives of affected industries. These groups enable MDE to establish proactive working relationships; to identify and solve problems; to exchange technical information and ideas; and to effectively address public health and environmental protection concerns. Nearly 40 standing workgroups currently exist to provide input into MDE's fulfillment of its environmental mission.

Public Information Act

Maryland's Public Information Act obligates this Department to grant the public a broad right of access to public records. However, it is Department policy to conduct its work in an open manner and provide the public with a maximum amount of accurate and timely information concerning the Department's activities. To improve customer service and promote public access to Departmental information, MDE has improved its tracking and processing of Public Information Act (PIA) requests, especially the more complicated multi-media requests. MDE's web site, www.mde.state.md.us, provides detailed information on the PIA process and allows customers to make a PIA request electronically. The trend towards universal Internet access and the advent of the PIA Homepage will continue to cultivate the desire to access public documents. In FY 2000, MDE received 2,536 PIA requests, 75% of which were handled within 30 days. MDE's goal for FY 2001 is to respond to 80% within 30 days. The Department plans to reach this goal by improving uniform response methods, conducting customer outreach, working with MDE's records retention workgroup to develop practical retention schedules, and exploring electronic filing systems.

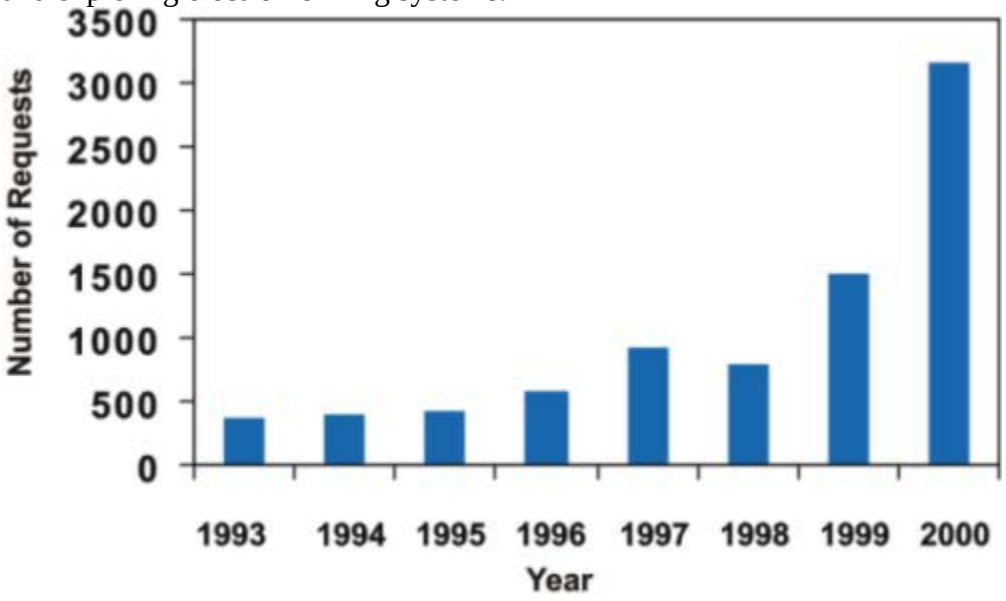


Figure 9.6

Parris N. Glendening, Governor of Maryland
Kathleen Kennedy Townsend, Lt. Governor of Maryland

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Large cover photo: North Branch of the Potomac River, Garrett County, Maryland.
Small cover photos are of various Maryland scenes.